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TRANSACTIONS

OF THE

KENTUCKY STATE MEDICAL SOCIETY.

TRANSACTIONS

OF THE

Kentucky State Medical Society

NEW SERIES. VOL. II.

THIRTY-EIGHTH ANNUAL MEETING

HELD AT

FRANKFORT, MAY 10, 11, AND 12, 1893

LOUISVILLE
PRINTED BY JOHN P. MORTON & COMPANY
1893

NOTE.

The Society is not responsible as a society for the views enunciated by individual members in the papers and discussions published in this volume.

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KENTUCKY STATE MEDICAL SOCIETY.

THIRTY-EIGHTH ANNUAL MEETING, HELD IN FRANKFORT, KENTUCKY, MAY 10, 11, AND 12, 1893.

FIRST DAY—*Morning Session.*

The meeting was called to order by the President, Dr. Arch Dixon, of Henderson, at 11:00 A. M., May 10th.

The Rev. J. McClusky Blaney opened the meeting with prayer.

The address of welcome was delivered by the Hon. Ira Julian, of Frankfort.

The report of the Committee of Arrangements was made by Dr. E. E. Hume, of Frankfort, Chairman:

Mr. President, Gentlemen of the Kentucky State Medical Society:

It affords me great pleasure on behalf of the Committee of Arrangements to say to you that when I returned from our last annual meeting and presented the fact that we were going to be here this year, the citizens of Frankfort were glad, and offered us their heartiest co-operation.

If I had listened to all who presented points of entertainment from the beginning, we would have had all play and no work. We have made out an order of business which I shall read, but before doing so I must say to you that we were unable to accept the hospitality offered us by several of our citizens in the way of entertainments, among whom were the Governor and Mrs. Brown; we had to decline a levee from them; we declined an entertainment from Mr. Murray; we declined one from United States Senator Judge Lindsay. The Secretary's report will come next, when we will adjourn until 1:00 o'clock, convene again at 2:30, papers, adjourn at 4:00 to

visit the Medical Institute for the Education and Training of Feeble-minded Children; President's address at 7:30, at the Opera House, followed by a lecture by General W. J. Hendrick; reception of physicians at 9:30, at the Capitol Hotel, followed by ball in the evening. To-morrow we will convene at 10:00 o'clock, when the program will consist of reading of papers until adjournment at 1:00; we convene again at 2:00, and adjourn at 6:00; banquet at the hotel at 8:30.

On the third day, Friday, we will convene at 9:00 o'clock, attend to such business as comes before us, and adjourn at 1:00 P. M.; then we will convene at 2:30, and attend to such other matters as may suggest themselves, and adjourn *sine die* at 5:00 o'clock P. M.

Dr. John Q. A. Stewart, Superintendent of the Kentucky Institute for the Education of the Feeble-minded, tendered the Society an invitation to visit that institution.

The report of the Chairman of the Committee of Arrangements was adopted, and Dr. Stewart's invitation accepted.

On motion of Dr. J. N. McCormack, of Bowling Green, the by-law requiring the Nominating Committee to report on the second day of each annual meeting was so amended that the report will in future be made on the third day, thus giving the committee ample time for the completion of their work before called on to report.

The Treasurer, Dr. J. B. Kinnaird, of Lancaster, made the following report:

Mr. President, Gentlemen of the Kentucky State Medical Society:

The Kentucky State Medical Society is now upon a sound financial basis, our membership is rapidly increasing, our prospects are growing brighter, and we trust the day has arrived when every member feels it a duty to contribute mind and money towards our advancement. Without money the machinery will stop. The majority of members have responded to all demands, and we have been able to meet all current expenses.

Our desire is to have five hundred prompt-paying members on our roster. Let each member determine to secure one new member who will keep his dues paid up, and then, as now, will we have the ablest Society in the Union.

We beg to submit the following report:

Receipts.

Balance in treasury, 1892,	$188 25	
Dues collected at Louisville,	601 50	
Dues from delinquents,	33 00	
		$822 75

Disbursements.

Secretary's salary,	$100 00	
J. P. Morton & Co.,	674 83	
J. R. Marrs,	7 25	
Dr. Ouchterlony,	32 00	
		814 08
Balance in treasury,		$8 67

J. B. KINNAIRD,
Treasurer.

On motion the report was adopted.

The permanent Secretary, Dr. Steele Bailey, made his report, as follows:

Mr. President, Gentlemen of the Kentucky State Medical Society:

The volume of Transactions, upon which the Society has received many gratulations from various sections of the country, was delivered to and received by every member of the Society, barring five, who, from having changed their post-office addresses or otherwise disposed of themselves, could not be found. These five volumes were returned to the Society at an expense of thirty-eight cents each.

The Society wishes to acknowledge the receipt of Transactions from the following States: Virginia, Georgia, New York, New Jersey, Maine, Illinois, Nebraska, Mississippi, North Carolina, Vermont, Tennessee, Minnesota, Ohio, Wisconsin, California, and Louisiana. To each of these State Societies a copy of Volume I, New Series, of the Kentucky State Medical Society was sent in exchange. A copy was sent, also, to the Library of the Army Medical Museum, Washington, D. C., at the request of Dr. John S. Billings, Major and Surgeon.

These proceedings, as well as those of previous years, are being carefully preserved, a nucleus, as it were, for a State Medical Library, should a collection of medical volumes ever be determined on by the Society.

It is pleasing to state that at this date your Society is flourishing like a green bay tree, with an activity and interest never before recorded. We have a paid-up membership numbering 402. A few are yet in arrears, but it is hoped that during this thirty-eighth annual meeting their dues will be eliminated.

To pursue paths that are devious, untrammeled by medical alliances, is enjoyed but by a select few. In this connection, permit me to say that during the year just passed only one has asked to be released from membership, namely: Dr. W. H. Caldwell, of Lexington. His resignation was accepted.

We have lost by death since the Louisville meeting the following members: John B. Cassell, of Burgin; J. W. Gilbert, of Lawrenceburg; J. D. Gilbert, of Hunt, and Wm. Jennings, of Richmond. There may be others who have left these scenes, but I trust not; if so, this office has failed to learn officially the facts.

A matter of interest will come before you for consideration during this session. It is to be hoped that it will meet with the approval required by the Constitution. I refer to the resolution which had to lie over one year, offered by Dr. McMurtry, and seconded by Dr. Vance, which reads thus: "*Resolved*, That the Constitution be so changed as to abolish *all standing committees*, and that in lieu thereof, the Chair, at the next meeting, appoint a committee to select and arrange papers on medical, surgical, obstetrical, and gynecological subjects, and also gentlemen to lead in the discussions on the various papers presented." Our working capacity is annually increasing, and we must be abreast of the age, prepared to give every one a hearing, which we can not do under the present *regime*.

A tabulated statement of my expenditures for the current year is herewith appended. All of which is respectfully submitted.

STEELE BAILEY,
Secretary.

On motion the report was adopted.

The Society adjourned until 2:00 P. M.

Afternoon Session.

The Society reassembled at 2:00 P.M., and was called to order by the President.

The Report on the Practice of Medicine was read by Dr. J. B. Marvin, of Louisville.

This report was discussed by Dr. J. N. McCormack, of Bowling Green.

The Report on Surgery was read by Dr. M. T. Scott, of Lexington. No discussion.

The Report on Obstetrics was read by Dr. Thomas S. Bullock, of Louisville.

Discussed by Dr. John G. Cecil and Dr. M. F. Coomes, of Louisville.

The Report of the Committee on Gynecology was read by Dr. John G. Cecil, of Louisville.

The report was discussed by Drs. J. M. Mathews, H. H. Grant, W. L. Rodman, and M. F. Coomes, of Louisville, the discussion being closed by the author.

The Report on Bacteriology, by Dr. Louis Frank, of Louisville, was read by title.

Dr. M. F. Coomes read a paper on the subject of "Nasal Surgery." No discussion.

Dr. R. B. Gilbert, of Louisville, introduced the following resolution:

Resolved, That it the wish of the Kentucky State Medical Society that the legislature shall immediately pass the bill now pending before it known as an Act to Promote the Study of Anatomy and Surgery, which provides for the giving of unclaimed dead paupers' bodies to the medical colleges in the State for dissection.

Motion seconded and unanimously adopted.

The following resolution was also introduced:

Resolved, That the Secretary of the Kentucky State Medical Society be requested to notify the legislature of Kentucky at once of the foregoing resolution.

Motion seconded and unanimously adopted.

The Committee on Credentials (Dr. E. E. Hume, of Frankfort, Chairman) reported a list of new names for membership. On motion the proposed members were elected by the casting of one ballot by the Secretary.*

Evening Session.

Wednesday, May 10, 1893, 8:00 P. M. The session was called to order at the Opera House. The President, Archibald Dixon, M. D., of Henderson, read the annual address.

Attorney General W. J. Hendrick and Colonel E. Polk Johnson, of Frankfort, delivered addresses.

SECOND DAY—*Morning Session.*

Meeting called to order at 9:25 A. M.

The Secretary read a communication presented by delegates from the Kentucky Pharmaceutical Society.

On motion the report was received, and the delegates were invited to seats in the hall.

Dr. A. D. Price, of Harrodsburg, announced the death of Dr. C. H. Spillman, and moved that the obituary, which he read, be given an appropriate place in the Transactions of the Society.†

The motion prevailed.

On motion of Dr. Lyman Beecher Todd the greetings of the Kentucky State Medical Society were sent to the State Medical Society of Indiana, then in session at Indianapolis.

On motion of Dr. W. L. Rodman, of Louisville, committee of one appointed last year by the Society to represent Kentucky, and to collect funds toward the erection of

*See italicised names in Roster.
†See this volume, page 16.

the proposed monument in Washington, D. C., to the memory of Dr. Samuel D. Gross, a committee of five was appointed to continue the work. The committee stands as follows: Dr. W. L. Rodman, of Louisville, Chairman; Dr. Orin D. Todd, of Eminence; Dr. J. H. Letcher, of Henderson; Dr. J. Q. A. Stewart, of Frankfort, and Dr. C. H. Todd, of Owensboro.

Dr. J. W. Speer moved that the Society spread upon its minutes some tribute to the worth of Dr. J. W. Gilbert, of Lawrenceburg. Carried.

The Chair appointed Dr. J. W. Speer, Dr. B. F. Eager, and Dr. B. L. Coleman, who presented the following resolution:

Resolved, That in the death of Dr. J. W. Gilbert, of Lawrenceburg, Kentucky, the profession has lost one of its most useful and honored members, and the State Medical Society offers sympathy and condolence to his family and friends in their great bereavement. Respectfully,

J. W. SPEER,
B. F. EAGER,
B. L. COLEMAN.

Dr. A. D. Price offered the following:

Resolved, That the Kentucky State Medical Society endorses the beneficent and indispensable work being done by Dr. John Q. A. Stewart at the Kentucky Feeble-minded Institute, and the Society hereby urges the General Assembly to foster the interests of this unfortunate class by all needful legislation and appropriations.

Resolved, That the Secretary be requested to notify the clerks of both houses at once of this resolution.

Carried.

Dr. R. B. Gilbert, of Louisville, offered the following:

Resolved, That the legislature be memorialized that it was the sense of this body that they should pass the bill now pending before them legalizing the procuring of unclaimed bodies for dissecting purposes.

Carried.

Dr. J. N. McCormack, of Bowling Green, who last year offered the resolution given on page 5 of the Transactions of the thirty-seventh annual meeting, to wit, "That a committee of five be appointed by the Chair to report to the next annual convention a plan for organizing a medical society in each county in the State as auxiliary to this Society, and so ordered that members of county societies as such shall become members of the State Society," said that he had been a correspondent for some time with a number of State medical societies which have had this work on trial or in progress in the State, and also with the Secretary of the American Medical Association, and that he had collected considerable literature on the subject. The work is so important that the committee thought it had better not be put in form before the Society until more information had been obtained, and until it was seen how the work was progressing in other States. He therefore reported progress, and asked that the committee be given further time. The committee was continued.

Dr. L. S. McMurtry, of Louisville, called up the resolution introduced by him last year which provides, "That the Constitution be so changed as to abolish the standing committees, and that in lieu thereof the Chair at the next meeting appoint a committee to select and arrange papers on medical, surgical, obstetrical, and gynecological subjects, and also gentlemen to lead in the discussions on the various papers presented." The resolution, which was seconded by Dr. Evans, looks to a change in the Constitution as relates to our order of business, and therefore had to lie over till the present time. It was recalled that the Society might have an opportunity to vote on the question.

On motion the amendment was adopted as proposed.

On motion of Dr. McCormack, Dr. A. H. Stewart, Chairman of the Senate Committee on Public Health, and Dr.

Johnson, Chairman of the House Committee on the same subject, were invited to seats upon the platform.

Dr. Lyman Beecher Todd, of Lexington, read a paper on "Cholera Infantum."

Discussed by Drs. R. B. Gilbert and William Bailey, of Louisville; and Dr. F. J. Yager, of Campbellsburg.

Dr. A. D. Price, of Harrodsburg, read a paper on "Infectious Diseases and their Prevention." (Report on Epidemics.) No discussion.

Dr. John Y. Oldham, of Lexington, read a paper on "The Surgical Treatment of Trachoma."

Discussed by Drs. J. M. Ray, S. G. Dabney, T. C. Evans, and P. Richard Taylor, of Louisville, the discussion being closed by the author.

The Committee on Special Discussions was named, as follows, by the President: Dr. David Barrow, of Lexington; Dr. H. K. Adamson, of Maysville, and Dr. L. S. McMurtry, of Louisville.

The Committee on Publication was also named: Drs. L. S. McMurtry, J. B. Marvin, J. A. Larrabee, and H. A. Cottell, of Louisville.

Dr. Curran Pope, of Louisville, read the Report on Diseases of the Nervous System.

Discussed by Dr. F. H. Clark, of Lexington; discussion closed by the author.

Dr. W. L. Rodman, of Louisville, read a paper on the subject of "Tumors of the Neck."

Discussed by Dr. H. H. Grant; discussion closed by the author.

Dr. T. B. Greenley, of Orel, read the Report on the Mortuary Statistics of Kentucky.

Dr. W. R. Blue, of Louisville, read the Report on Genito-Urinary Surgery.

Dr. W. O. Green, of Louisville, read the Report on Rectal Diseases. No discussion followed.

Dr. T. C. Evans, of Louisville, read the Report on the Progress of Otology.

Discussed by Dr. S. G. Dabney.

Dr. Henry E. Tuley, of Louisville, read a paper on "Stomach Washing in Infants." At the close of the paper Dr. Tuley exhibited the apparatus used. It consisted of glass tubing, a funnel, and catheter.

Discussed by Drs. J. C. Cavenaugh and J. G. Cecil; discussion closed by the author.

Dr. David Barrow, of Lexington, read a paper entitled "Some Cases in Abdominal Surgery, with Remarks."

Dr. W. C. Dugan, of Louisville, read the Report on Abdominal Surgery (Appendicitis).

Dr. L. S. McMurtry, of Louisville, read a paper on the "Etiology and Pathology of Intra-Pelvic Inflammations in Women," illustrated with specimens and cases.

These papers were discussed jointly by Drs. Cecil and Yager, and by Dr. W. H. Wathen, of Louisville, and Dr. J. G. Carpenter, of Stanford.

Dr. H. H. Grant, of Louisville, read a paper on "The Management of the Damaged Gut in Strangulated Hernia." No discussion.

Dr. J. M. Mathews read a paper on "Diseases of the Rectum." No discussion.

The Committee on Nominations, through the President, announced the officers for the ensuing year:

President—Dr. J. Q. A. Stewart, Frankfort.
First Vice-President—Dr. O. D. Todd, Eminence.
Second Vice-President—Dr. C. D. Mansfield, Stanton.
Treasurer—Dr. J. B. Kinnaird, Lancaster.
Permanent Secretary—Dr. Steele Bailey, Stanford.
Librarian—Dr. Frank Boyd, Paducah.
Board of Censors—Dr. B. F. Eager, Hopkinsville; Dr. B. F. Harrington, and Dr. O. F. Cash.

The next place of meeting was fixed at Middlesborough, Ky.

The committee recommends that the Committee of Arrangements be requested to arrange for surgical, pharmaceutical, and other displays for future meetings of the Society in a building entirely separate from the building in which the meetings of the Society are held.

The report was adopted.

At the suggestion of Dr. L. S. McMurtry, of Louisville, and upon the motion of Dr. George W. Beeler, of Clinton, that part of the report of the committee which fixed the next place of meeting at Middlesborough was reconsidered.

On motion the President (elect), Treasurer, and Secretary of the Society were appointed to name the next place of meeting.

This committee named Shelbyville as the next place of meeting, and Dr. J. M. Harwood as Chairman of the Committee of Arrangements.

Dr. J. G. Carpenter, of Stanford, read a paper on "The Conservative Surgery of To-day." No discussion.

Dr. August Schackner, of Louisville, spoke on the "Care and Construction of a Modernized Outfit."

Discussed by Drs. E. E. Hume and J. G. Carpenter; discussion closed by the author.

Dr. William Cheatham, of Louisville, read a paper on "Intubation." No discussion.

Dr. J. Fulton Purdom, of Louisville, read a paper on "Typhoid Fever." No discussion.

Dr. J. M. Mathews, of Louisville, read the following resolutions:

WHEREAS, The superintendents and managers of the asylums for the insane in this State have reported from year to year an overcrowded condition of the several asylums in their care, and insufficient room to accommodate a large number of other

applicants, who are not only deprived of timely treatment, but who are left in county jails or at their homes, at the peril of their own safety and the safety of their families and the public; and,

WHEREAS, Such a condition of things is totally incompatible with the best interests of the public, whether considered from a financial or a sanitary point of view;

Resolved, That we urge upon the General Assembly now in session the importance of immediate provision for the relief at the hands of the profession which has ever had an open ear to the wants of suffering humanity.

Resolved, That we earnestly petition the legislature to enact the bill now before the Senate relating to the management of the insane asylums.

Dr. W. H. Wathen moved the adoption of the resolution, and that a copy of it be sent to the legislature.

Seconded and carried.

Dr. H. J. Cowan, of Danville, read a paper on "Splenectomy for Scirrhous Carcinoma; Death from Shock."

Discussed by Dr. W. C. Dugan, of Louisville; discussion closed by the author.

Dr. F. M. Greene, of Greenedale, read a paper on "Ergot in Labor and Abortion."

Discussed by Dr. J. O. Jenkins, of Newport; Dr. S. D. Swope, of Marion, and Dr. F. J. Yager; discussion closed by the author.

Evening Session.

Thursday, May 11, 1893, 8:00 P. M.; Society called to order by the President.

Dr. P. Richard Taylor, of Louisville, read a paper on "The Benefit of Cocaine in Iritis."

Discussed by Drs. E. R. Palmer and R. B. Gilbert, of Louisville; discussion closed by the author.

A paper on "Cholera," by Dr. J. N. McCormack, of Bowling Green, was read by title.

Dr. A. W. Quinn, of Henderson, read a paper entitled "A Case of Suppurative Peritonitis; Laparotomy; Recovery." No discussion.

Dr. J. Morrison Ray, of Louisville, read a paper on "Some Hereditary and Congenital Eye Diseases." No discussion.

Dr. William Bailey, of Louisville, at the request of the State Board of Health, spoke upon the recent endemic of typhoid fever in Louisville. To this Dr. William Vissman, of Louisville, made some supplementary remarks.

Discussed by Drs. E. R. Palmer, D. S. Reynolds, P. R. Taylor, and J. N. McCormack; discussion closed by Drs. Bailey and Vissman.

THIRD DAY—*Morning Session.*

The meeting was called to order at 9:00 o'clock A. M.

Dr. J. A. Stucky, of Lexington, read a paper on "The Naso-Pharynx in Measles and Scarlatina."

Discussed by Dr. J. G. Carpenter.

Dr. F. J. Yager, of Campbellsburg, read a paper on "Paralysis Agitans."

Discussed by Dr. T. B. Greenley, of Orel.

Dr. Dudley S. Reynolds, of Louisville, read an essay on the "Present Status of the Medical Profession in the United States." No discussion.

The President-elect, Dr. J. Q. A. Stewart, of Frankfort, was conducted to the chair by Dr. Brown and Dr. Lyman Beecher Todd.

Being presented by the retiring President, Dr. Stewart said:

I am overwhelmed with the honor you have conferred upon me. I am profoundly grateful to be selected to preside over a body of distinguished men, such men as compose the Ken-

tucky State Medical Society; it is an honor to be sought by any doctor in the State of Kentucky. I feel grateful to you because I have not been very prominently before the Society except in my regular attendance upon it. There was nothing due to me so far as any papers or any matter that I have presented to the association. I thank you most gratefully, gentlemen. I also have to thank you for the kind recognition you have given to the work that ought to be prominent in the heart of every physician in the State of Kentucky. I feel that it is a compliment to me because of the fact that I am representing a matter that every doctor in the State ought to take seriously into consideration. The work in which I am peculiarly engaged is not fully recognized or understood by the physicians, men who ought to know all about it. I only want to present that fact to you that you may take into consideration one of the grandest works in the world, and I know if you gentlemen would take that matter into consideration the legislature would favor it fully and abundantly. I thank you, gentlemen, for your consideration, and for the honor you have conferred upon me.

Dr. T. B. Greenley, of Orel, read a paper on "The Credulity of the Medical Profession."

Discussed by Dr. Yager.

Dr. T. N. Willis, of Finchville, read a paper on "The Physician as a Public Benefactor and Sanitarian."

Dr. O. H. Reynolds, of Frankfort, read a paper on "Syphilis; Excision of Chancre in Treatment."

Both discussed by Dr. Greenley.

A paper on "Insomnia," by Dr. Curran Pope, of Louisville, was read by title.

Dr. S. G. Dabney, of Louisville, read a paper on "The Indications for and Selection of Mydriatics and Myotics in Ophthalmic Practice." No discussion.

Dr. L. S. Givens, of Cynthiana, read a paper on "Chronic Inflammation of the Tonsils." No discussion.

The Secretary announced the delegates to the American

Medical Association, which meets at Milwaukee, June 6th, as follows:

J. P. Thomas,	B. W. Stone,	J. N. Baughman,
J. G. Cecil,	W. L. Rodman,	J. Q. A. Stewart,
L. S. McMurtry,	H. Brown,	T. B. Greenley,
H. M. Skillman,	S. W. Willis,	W. M. Martin,
A. D. Price,	J. G. Carpenter,	W. D. Powell,
B. L. Coleman,	L. B. Todd,	J. B. Kinnaird,
J. R. Ely,	Gilbert I. Cullen,	J. M. Mathews,
J. O. Robinson,	P. Richard Taylor,	W. H. Wathen,
G. W. Griffiths,	Curran Pope,	John M. Foster,
W. B. Meany,	James Hopson,	F. M. Greene.
J. M. Meek,	D. S. Reynolds,	

On motion of Dr. Lyman Beecher Todd the thanks of the Society were tendered to Dr. Archibald Dixon, the retiring President, for his courteous and impartial ruling in administering his office.

The motion was seconded and unanimously carried.

The following resolution, offered by Dr. Lyman Beecher Todd, of Lexington, was unanimously adopted by a rising vote:

Resolved, That the thanks of the Kentucky State Medical Society, now in thirty-eighth annual convention in the city of Frankfort, be tendered to Rev. Dr. Blaney for prayer offered, and to Hon. Ira Julian, of Frankfort, for the eloquent address of welcome delivered to this Society upon its assembling here; to the citizens of Frankfort for the delightful reception tendered on Wednesday evening at the Capitol Hotel; to the citizens and medical profession of Frankfort and Franklin County for the elegant and enjoyable banquet given at the Capitol Hotel on Thursday evening; to the very courteous and attentive Committee of Arrangements for ample and convenient provisions for reception of this Society; to the press for courtesies; to the Hon. Jack Hendrick for his admirable address to the Society, "The Doctor's Mission;" to Dr. J. Q. A. Stewart, of the Feeble-minded Institute, who enter-

tained us so handsomely on Wednesday, and to the various railroads for reduction of fares to members and their families attending this meeting.

There being no further business, the Society on motion adjourned to meet in Shelbyville on the second Wednesday in June, 1894.

STEELE BAILEY, M. D.,
Permanent Secretary.

Obituary.

Dr. Charles Harvey Spillman was born in Garrard County, Kentucky, May 20, 1805, received his collegiate education at Center College, and took his degree in medicine at Transylvania in 1835. He assisted in the organization of the Kentucky State Medical Society at Frankfort in 1851, and was its president in 1854. He was an honored member of his profession, faithful to every trust, and respected by all who knew him. He died at Hopkinsville, December 15, 1892.

A. D. PRICE.

PRESIDENTS

OF THE KENTUCKY STATE MEDICAL SOCIETY.

1851	William L. Sutton, M. D.,	Georgetown.
1852	William S. Chipley, M. D.,	Lexington.
1853	Samuel D. Gross, M. D.,	Louisville.
1867	D. N. Porter, M. D.,	Eminence.
1868	William Pawling, M. D.,	Danville.
1869	Henry Martyn Skillman, M. D.,	Lexington.
1870	William A. Atchison, M. D.,	Richmond.
1871	T. N. Wise, M. D.,	Covington.
1872	Lewis Rogers, M. D.,	Louisville.
1873	Joseph W. Thompson, M. D.,	Paducah.
1874	J. Baker, M. D.,	Shelbyville.
1875	J. A. Hodge, M. D.,	Henderson.
1876	R. W. Gaines, M. D.,	Hopkinsville.
1877	Lunsford P. Yandell, sr., M. D.,	Louisville.
1878	Charles H. Todd, M. D.,	Owensboro.
1879	R. W. Dunlap, M. D.,	Danville.
1880	Lyman Beecher Todd, M. D.,	Lexington.
1881	J. W. Holland, M. D.,	Louisville.
1882	A. D. Price, M. D.,	Harrodsburg.
1883	J. N. McCormack, M. D.,	Bowling Green.
1884	Pinckney Thompson, M. D.,	Henderson.
1885	J. P. Thomas, M. D.,	Pembroke.
1886	W. H. Wathen, M. D.,	Louisville.
1887	John G. Brooks, M. D.,	Paducah.
1888	Lewis S. McMurtry, M. D.,	Louisville.
1889	John A. Ouchterlony, M. D.,	Louisville.
1890	George W. Beeler, M. D.,	Clinton.
1891	Hawkins Brown, M. D.,	Hustonville.
1892	Arch Dixon, M. D.,	Henderson.
1893	John Q. A. Stewart, M. D.,	Frankfort.

ROSTER.

The italicised names are those of members elected in 1893.

Adamson, H. K., Maysville.
Aitken, C. W., Sherburne.
Alcorn, Edward, Hustonville.
Anderson, Turner, Louisville.
Alexander, H. N., Paris.
Aud, C. Z., Cecilian.
Allen, T. S., Winchester.
Allen, Seth, Somerset.
Atkins, Henry S., Russell Cave.
Agnew, P. L., Sebree.
Anderson, S. J., Harrodsburg.
Allen, S. S., Lexington.
Alexander, S. C., Owensville.
Atkins, W. L., Lexington.
Alexander, John B., Mason.
Allan, B. A., Louisville.
Austin, Curtis A., Flagfort.
Adams, John F., Bagdad.
Beeler, George W., Clinton.
Brown, H., Hustonville.
Brown, W. A., Parkville.
Brown, John Young, Lakeland.
Brooks, J. G., Paducah.
Bloom, I. N., Louisville.
Bailey, William, Louisville.
Bailey, Steele, Stanford.
Baker, J. M., Shelbyville.
Butt, A. L., Franklin.
Blair, B. H., Cupio.
Bullock, T. S., Louisville.
Blanford, F. T., St. Marys.
Burnett, Theodore L., Louisville.
Bogle, John C., Danville.
Barrow, David, Lexington.
Bright, Hardin W., Richmond.
Barbour, John Ford, Louisville.
Betchel, John T., Poole's Mills.
Book, Hampton D., Robards.
Blanding, Abraham L., Walnut Hills.
Black, James M., Red House.
Becket, J. B., Powersville.
Bryan, Joseph, Lexington.
Baughman, J. N., Flat Lick.
Bullock, W. O., Lexington.
Boggess, Walter F., Louisville.
Brown, Jos. Thomas, Clintonville.
Butler, Thomas L., Louisville.
Bosworth, Lewis N., Lexington.
Bagby, D. M., Walton.
Bodine, J. M., Louisville.
Boyd, Frank, Paducah.
Blaine, A. D., Dry Ridge.
Bowen, D. C., Nolin.
Blue, W. R., Louisville.
Beard, W. F., Shelbyville.
Birchett, John G., Croppers.
Barbour, Philip Foster, Louisville.
Cheatham, William, Louisville.
Cartledge, A. M., Louisville.
Clarke, F. H., Lexington.
Coomes, M. F., Louisville.
Cottell, H. A., Louisville.
Cartwright, H. L., Shelby City.
Cleaver, W. W., Lebanon.
Cecil, John G., Louisville.
Coleman, B. L., Lexington.
Carpenter, J. G., Stanford.
Combs, Glenmore, Hedges.
Creel, M. P., Central City.
Cowan, Harry J., Danville.
Coleman, J. B., Murray.
Caldwell, J. Edwin, Perryville.
Cottingham, Isham, Cairo.
Coleman, J. S., Falls of Elkhorn.
Coleman, W. W., Mt. Washington.
Curry, G. M., Owingsville.

Caldwell, W. Hampton, Lexington.
Cottingham, Levin, Robards.
Chenoweth, Jas. Shreve, Louisville.
Chipman, N. B., Falmouth.
Cullen, Gilbert Isham, Cincinnati.
Chapman, W. Carroll, Louisville.
Colyer, J. Rufus, Somerset.
Coombs, Sam'l W., Bowling Green.
Collins, Moses, Lakeland.
Coons, Llewellyn, Muir.
Carrick, J. C., Lexington.
Cassell, John B., Burgin.
Coons, T. C., Chilesburg.
Coffman, W. H., Georgetown.
Carr, Willis H., Claysville.
Cherry, A. T., Caneyville.
Cochran, Sam, Louisville.
Cartwright, H. P., Bowling Green.
Cinnamond, M. Miller, Hatton.
Chinn, George W., Frankfort.
Dismukes, W. L., Paducah.
Durrett, W. T., Louisville.
Dunlap, Fayette, Danville.
Duncan, E. M., Eddyville.
Dixon, Archibald, Henderson.
Dabney, S. G., Louisville.
Daugherty, Thos. H., Sadieville.
Davis, George Edwin, Salvisa.
Davis, J. D., Bethel.
Dean, E. R., Judy.
Dixon, Jr., Archibald, Henderson.
Dunn, Louis, Corinth.
Duerson, Chas. B., Mt. Sterling.
Davis, W. M., Louisville.
Doherty, W. B., Louisville.
Dunn, M. C., Henderson.
Dugan, W. C., Louisville.
Dade, Waller H., Frankfort.
Evans, J. B., Riley's Station.
Evans, George W., Richmond.
Elliott, C. A., Paducah.
Evans, W. R., Danville.
Eager, Benjamin F., Hopkinsville.
Edwards, Charles L., Sebree.
Evans, Thomas A., Louisville.
Evans, Silas, Lexington.

Ely, James R., Frankfort.
Flannagen, Jno. T., Powers' Store.
Finck, T. D., Louisville.
Floyd, William, Mannville.
Foster, John M., Richmond.
Farris, Alex. A., Hickman.
Flexner, Simon, Louisville.
Frank, Louis, Louisville.
Falconer, Richard Craig, Lexington.
Fallis, R. G., Louisville.
Ferguson, R. V., Haydonville.
Greenley, T. B., West Point.
Griffiths, Patton, Louisville.
Grant, H. H., Louisville.
Gilbert, J. W., Lawrenceburg.
Gaines, R. W., Hopkinsville.
Green, F. D., Bloomfield.
Grimes, G. W., Little Rock.
Grimes, J. A., Austerlitz.
Griswold, A. V., Louisville.
Grant, W. E., Louisville.
Griffin, P. H., Henderson.
Green, Jr., Edward M., Danville.
Gudgell, Frank P., Owingsville.
Green, Walter O., Louisville.
Green, F. M., Greendale.
Gilbert, J. D., Hurt.
Given, Lamme S., Cynthiana.
Garner, Wm. F., Humphrey.
Goodloe, D. S., Lexington.
Goodman, Henry M., Louisville.
Garr, C. R., Flemingsburg.
Griffiths, Geo. W., Louisville.
Griffiths, W. M., Louisville.
Grant, J. W., Petersburg.
Gibson, H. R., Richmond.
Groves, Chas. J., Buecharl.
Guest, J. W., Louisville.
Gilbert, R. B., Louisville.
Holloway, J. W., Keene.
Hanna, W. M., Henderson.
Harwood, J. M., Shelbyville.
Hickey, C. W., Flemingsburg.
Hays, T. A., Fairmount.
Hodge, J. A., Henderson.
Hopson, Joseph, St. Matthews.

Hart, H. C., Winchester.
Hayden, R. H., Grassy Lick.
Herring, Henry C., Lancaster.
Helm, S. L., Spears.
Howe, James Lewis, Louisville.
Harris, Giles, Speedwell.
Henderson, James A., Richmond.
Hume, E. E., Frankfort.
Harris, John W., Union City.
Handley, Edward, Sturgis.
Hamner, Joseph, Spring Grove.
Holloway, Uriah G., Troy.
Henderson, Peyton R., Louisville.
Holsclaw, John R., Zoneton.
Hower, T. J., Cooper.
Harrod, F. L., Harrodsburg.
Holley, James T., Middlesborough.
Hobson, W. H., Harrod's Creek.
Hayes, John E., Louisville.
Harvey, C. W., Louisville.
Herndon, B. F., Barboursville.
Holloway, Sam. W., Louisville.
Heuser, Henry, Louisville.
Hertzsch, Della, Louisville.
Huddleson, J. W., Murphysville.
Ingram, Julia C., Louisville.
Irwin, J. W., Louisville.
Irvine, W. E., South Carrollton.
Johnson, D., West Point.
Johnston, J. W., Winchester.
Johnson, B. T., Winchester.
Jones, H. L., Henderson.
Jamison, W. A., Eminence.
James, Samuel E., Frankfort.
Jennings, Wm., Richmond.
Jenkins, J. O., Newport.
Jackson, A. W., Earlington.
Judy, Garrett, Bethel.
Juett, David P., Blandville.
Johnson, Calvin R., Waddy.
Johnson, J. E., Zion.
Keen, Wm. C., Albany.
Kenyon, F. P., Middlesborough.
Kincaid, J. W., Catlettsburg.
Kincaid, J. D., Catlettsburg.
Knott, L. D., Lebanon.
Kelly, Edward, Lebanon.
Kelch, Allen H., Louisville.
Kinnaird, J. B., Lancaster.
Keller, David Henry, Lexington.
Kinnaird, Thos. H., Lexington.
Kenner, Robert C., Louisville.
Kash, Oliver S., Moorefield.
Kaelin, F., Louisville.
Kirk, W. R., Louisville.
Kelly, C. W., Louisville.
Kennedy, O. A., Richmond.
Kelly, George D., Lexington.
Kelly, J. H., Mayslick.
Kincaid, D. Howard, Danville.
Kavanaugh, C. W., Lawrenceburg.
Letcher, J. H., Henderson.
Lovell, A. G., Mt. Vernon.
Larrabee, J. A., Louisville.
Laurence, Anna F., Louisville.
Leaming, S. E., Stanton.
Luckett, E. H., Owensboro.
Lieber, A. J., Henderson.
Lucas, Chas. G., Louisville.
Letcher, Benjamin, Henderson.
Lowry, John C., Troy.
Leathers, Chas. A., Lawrenceburg.
Leak, J. K., New Haven.
Lewis, Harry H., Louisville.
Lewis, John A., Georgetown.
Lewis, C. C., Stamping Ground.
Lillard, G. D., Lawrenceburg.
Lassing, H. C., Union.
McChord, R. C., Lebanon.
McMurtry, L. S., Louisville.
Marvin, J. B., Louisville.
Moore, J. S., New Hope.
Mathews, J. M., Louisville.
McKinley, J. H., Winchester.
Morrison, A. M., Goshen.
Mann, Chas. M., Nicholasville.
McCormack, J. N., Bowling Green.
McClure, W. B., Lexington.
McDowell, Harvey, Cynthiana.
Milliken, W. B., Rockfield.
Murrell, D. G., Paducah.
Mason, W. M., Murray.

Mott, J. W., Fulton.
Morris, N. G., Fulton.
Meredith, Thomas O., Burgin.
McMurray, T. J., Lawrenceburg.
Meek, J. M., Morgan.
Marshall, Ewing, Louisville.
Martin, W. M., Kingston.
Martin, Joseph, Poindexter.
Mansfield, Cassius Dudley, Stanton.
McDowell, Lucien, Flemingsburg.
Meek, Harrison Davis, Claysville.
Moss, Virgil U., Rockfield.
Metcalfe, John H., Louisville.
Maddox, J. D., Rockport.
Miles, Abraham M., Havvieland.
Meany, W. B., Louisville.
McDowell, Jas. L., Central City.
Meunch, Albert, Louisville.
McDonough, J. N., Louisville.
Muen, Albert.
Mathers, Chas. W., Head Quarters.
McNue, Nelson H., Carlisle.
Norment, Henry T., Anthoston.
Neet, John T., Versailles.
Nunnelly, Henry C., Ford.
O'Neal, W. S., Lancaster.
Ouchterlony, John A., Louisville.
Orendorf, Henry, Louisville.
Oldham, John Y., Lexington.
Orr, Alexander, Demossville.
Owens, Joseph L., Somerset.
O'Conner, J. W., Elizabethtown.
Prewitt, James V., West Point.
Price, Ancil D., Harrodsburg.
Pusey, H. M., Louisville.
Palmer, E. R., Louisville.
Plummer, H., Harrodsburg.
Pryor, J. W., Lexington.
Purdom, J. F., Mitchellsburg.
Pigg, W. B., Berea.
Poyntz, James M., Richmond.
Pettus, J. D., Crab Orchard.
Price, Joseph L., Sherman.
Pack, John E., Georgetown.
Perkins, George, Somerset.
Parker, J. W. F., Somerset.
Pindar, L. O., Cynthiana.
Patterson, Thos. L., Lexington.
Price, J. C. S., Poplar Plains.
Phillips, Wm. E., Wyoming.
Pusey, Henry K., Louisville.
Pelle, H. E., Louisville.
Pope, Clarence T., Louisville.
Pitman, H. L., East Bernstadt.
Pope, Curran, Louisville.
Parker, J. H., Corbin.
Pennington, J. R., Louisville.
Pierce, E. L., Louisville.
Peck, D. D., Helena.
Powell, J. N., Corydon.
Pusey, D. C., Brandenburg.
Powell, W. D., Harrodsburg.
Pratt, R. D., Shelbyville.
Phythian, J. L., Newport.
Reynolds, Dudley S., Louisville.
Roberts, W. O., Louisville.
Richmond, W. W., Clinton.
Riley, F. F., Anchorage.
Rodman, W. E., Hodgenville.
Rodman, W. L., Louisville.
Ray, J. M., Louisville.
Reid, H., Stanford.
Rankin, H. C., Berry.
Robertson, D. D., Calhoun.
Roby, Thomas A., Paris.
Ross, Wm. P., Madisonville.
Ramsey, R. T., London.
Robinson, James Owen, Bridgeport.
Roberts, Harvey H., Paris.
Reddish, George M., Somerset.
Reynolds, O. H., Bagdad.
Robertson, A. L., Sherburne.
Ritter, H. B., Louisville.
Reddick, James F., Paducah.
Robertson, J. D., Paducah.
Rousey, J. H., Louisville.
Ray, John M., Chestnut Grove.
Stuart, Robert, Zion.
Swope, Samuel D., Marion.
Shelton, E. B., Blandville.
Sleet, Wm. E., Midway.
Shirley, Isaac A., Winchester.

Shirley, J. A., Grassy Lick.
Scott, Preston B., Louisville.
Stucky, T. H., Louisville.
Stucky, J. A., Lexington.
Stewart, J. Q. A., Frankfort.
Seargent, Andrew, Hopkinsville.
Scott, Matthew T., Lexington.
Skillman, H. M., Lexington.
Scribner, E. B., Louisville.
Stone, B. W., Hopkinsville.
Skinner, C., Louisville.
Smith, A. Wilkes, Richmond.
Snowden, J. A., Right Angle.
Simpson, James, Winchester.
Simpson, F. C., Louisville.
Stewart, J. T., Berry.
Sweitzer, H., Payne's Depot.
Scott, W. F., Somerset.
Smith, Jerome, Hammondsville.
Scott, Lewis M., Frankfort.
Stewart, P. H., Paducah.
Simmons,NathanR.,Kirklevington.
Stone, John N., Berry.
Stedman, Samuel M., Lexington.
Simpson, Geo. T., Louisville.
Schrachner, Aug., Louisville.
Smith, D. T., Louisville.
Strickler, F. P., Elizabethtown.
Samuel, F. W., Louisville.
Simons, A. A., Cloverport.
Selby, J. T., Elizabethtown.
Smith, E. S., Hodgenville.
Sheley, P. A., Louisville.
Shuck, J. H., Louisville.
Stewart, John Pugh, Frankfort.
Speer, J. H., Brownsboro.
Speer, James W., Alton.
Stewart, Alex. H., Prestonsburg.
Todd, Charles H., Owensboro.
Todd, Oren D., Eminence.
Thomas, J. P., Pembroke.
Thompson, Pinckney, Henderson.
Townsend, T. J., Shocoh.
Taylor, J. Q., South Union.
Taylor, J. L., Greencastle.
Todd, L. Beecher, Lexington.
Townsend, R. P., Adairville.
Tucker, D. C., Danville.
Taulbee, J. B., Mt. Sterling.
Taylor, T. J., Richmond.
Tuley, Henry E., Louisville.
Taylor, Philip Richard, Louisville.
Townsend, Oliver L., Orr.
Thornton, G. G., Gravel Switch.
Trapp, Charles W., Lexington.
Trise, D. M., Middlesborough.
Usher, T. M., Fulton.
Underwood, W. L., Cropper.
Vance, Ap Morgan, Louisville.
Violette, J. D., Williamstown.
Vaught, Clarence H., Richmond.
Vice, Thomas Bryam, Sherburne.
Weis, T. W., Peach Orchard.
Walton, C. J., Louisville.
Wagner, L. C., Nicholasville.
Wathen, W. H., Louisville.
Wilson, F. C., Louisville.
Wade, J. H., Ashland.
Webb, Wm. C., Bryantsville.
Willis, R. L., Lexington.
Willis, Sam W., Pine Grove.
Willis, T. A., Finchville.
Wiley, E. M., Harrodsburg.
Woody, Sam E., Louisville.
Woods, R. T., Paris.
Wesley, J. T., Middleburg.
Williams, Urbane V., Frankfort.
Wallingford, Alex. M., Mt. Carmel.
Warren, Isaac, Somerset.
Warner, Geo. M., Louisville.
Weidner, C., Louisville.
Wesley, Cyrus, Newell.
Witherspoon, J. T., Lawrenceburg.
Williams, John M., Louisville.
Wilkerson, E. T., McKinney.
Yager, F. J., Campbellsburg.
Young, F. O., Lexington.
Yandell, David W., Louisville.
Yeager, W. H., Louisville.
Zeller, Benjamin F., Crab Orchard.

KENTUCKY STATE MEDICAL SOCIETY.

By Arch Dixon, M. D.
Henderson, Ky.

It is a comparatively easy matter for a doctor to write an address upon some medical subject to be delivered to an audience of medical men, but to prepare an address which shall be of interest to physicians and the laity as well is, as I have found it, a task indeed; and as what I have to say is necessarily and almost wholly connected with medical matters, I shall first of all offer my apologies to those of you outside of the profession should you find my remarks dull and prosy.

To you gentlemen of the Kentucky State Medical Society I wish to return my sincere thanks for the distinguished honor conferred upon me. No one can feel more keenly than I do my own incapacity properly to fill the distinguished position to which you have elected me, or more sincerely regret that some other, older than I in the profession, more competent and more worthy of the honor, had not been chosen in my place.

But since you have seen fit thus to honor me, I must appeal to your generosity to overlook any of my shortcomings and to rely upon your mutual aid to assist me in the discharge of the important duties thus imposed.

The Kentucky State Medical Society has had a glorious past and can look forward to a still more glorious and useful future. Few of us appreciate its value and the immense advantage it has been to the medical profession throughout the State. Its annual meetings have improved the morals, fostered the devotion to scientific investigation, and engendered a mutual respect and good feeling between its members. Frequently there have been envying jealousies and heart-burnings, fault-finding and traducings; those who had achieved distinction were often slandered and abused by those who had not been so fortunate; the slightest imperfection of a professional brother was magnified into such Gargantuan proportions as completely to obscure any really good qualities or attainments that he might actually possess, and thus the entire profession was injured in the estimation of the public by the rivalries, bickerings, and jealousies that existed among its members. Let it be hoped that this is past, and that now each one shall be so engaged in the effort to improve himself and elevate his own position in the profession that he shall have no time in which to study his neighbor's faults, much less to accurately scrutinize and publicly herald his seeming defects. The science of medicine has been so much enlarged in all its different departments by the minute researches now demanded and by the great and rapid progress of many of its specialties as to require that every moment of one's time be occupied in the closest study in order to keep abreast with the daily advances in our profession. And he who is thus engaged has no time to study the defects of others. Let us put all this behind us, and in the language of a distinguished medical editor, "Let us try to be neither dead nor dull, but let us be saturated with a desire to improve, advance, and inspire each other to do the best work in our power for humanity and the

profession. Let us strive to make the uppermost thoughts of our lives those connected with science, humanity, charity, business, thrift, brotherly kindness, and cheerfulness."

That we have advanced, and that Kentucky medicine is fully abreast with the age, there can be no doubt; and as convincing evidence of this fact one has only to turn to the report made by your Publication Committee of last year's proceedings, a volume of Transactions filled with strong, sensible, practical papers, most ably edited, well printed and well bound; in fact, a volume which would reflect credit upon the American Medical Association itself. I can pay no higher compliment to your Committee on Publication than to suggest that it be continued without change. In matters pertaining to the public health and sanitation it may be said, without the fear of contradiction, that Kentucky is keeping step with her sisters. With the limited fund provided for her Board of Health, about the smallest in the Union, and with the county boards doing their work gratuitously, the success attained by her State Board, while it may not be up to their expectations and desires, compares favorably with that of other States, even where the provision for carrying on the reform has been much more liberal. Boards of Health exist in every county in the State, some quite active, many ordinarily dormant, but all with the machinery organized to deal with local epidemics of any character, such as smallpox, diphtheria, scarlet fever or of spotted fever, like those which occurred recently in the counties of Webster and Bulter. Such outbreaks are managed with little interference to commerce and travel, and usually at a nominal cost to the county or municipality, in striking contrast with the panics and extravagances of times antedating the existence of health boards. In most of our cities and towns, and in thousands of private families, sanitary knowledge

is being applied in the management of their affairs with the most satisfactory results, and the sentiment to which this is due, both professional and personal, is of steady growth; and with the continued education of the people in this regard it will be found—as it already has—that legislation, in so far as the public health is concerned, is easier to obtain and in fact becoming recognized as a necessary and most important branch of State Government. To our own State Board is largely due the origin of the "International Conference of State and Provincial Boards of Health," by whose work it is confidently believed that every agency available under State and national laws has been co-ordinated and utilized for excluding cholera from our shores, and in providing the machinery for an efficient inspection service at every threatened point, ready to be set in motion at a moment's notice, should the disease break through at any weak spot in our line of quarantine defenses. These plans are broad and comprehensive, beginning with the immigrant and his effects from the place of his departure in Europe and following him to his final destination in this country, step by step, constituting a safeguard which may be relied upon either to prevent or at least mitigate the horrors of an epidemic. The recent report of the Sanitary Survey in Louisville, in the face of the bitter criticism to which our State Board of Health and especially its Secretary, Dr. McCormack, was subjected last year, is a most complete triumph, and the results can not but be far-reaching for good, both there and elsewhere. The new practice act recently approved by the Governor is a great advance on the old law, under which, by vigorous prosecutions and the aid of a united profession in the city of Louisville and throughout the State, much good work was done. The new law is substantially the one now in force in Illinois and Minnesota, and if it has the

strong support to which it is entitled, the day of the quack doctor in Kentucky will soon be over. I can not urge upon the members of this Society and the profession at large too strongly the importance of supporting this Board of Health in their endeavors to ward off death and disease from our State. They have done and are doing good work, and I may say, with the limited means at their disposal, work which compares favorably with that done in States with appropriations much larger. "The serious objection made by legislators to health reform is that it is expensive, and that such boards as ours are especially open to this objection during the formative period of their work. That this objection disappears as the work progresses is shown by the experience of England, where in half a century it has cut down the death-rate from thirty-two to eighteen per thousand, and has become one of the most popular and best supported branches of the Government, and in Michigan, where an appropriation of $30,000 was made last year to establish a laboratory for hygienic work, in addition to the $16,145 provided for the annual support of the board." *

In order to show how Kentucky stands in the matter of revenue for general and special public health uses and prevention of epidemics, the following table, taken from the last report of the State Board of Health of Kentucky, is given:

A graduated list showing the total amounts of appropriated revenue available in the year 1888, for general and special public health uses and prevention of epidemics by the various State boards of health in the United States, is as follows:

Massachusetts,	$111,300	North Carolina,	$5,500
Louisiana (about),	100,000	Indiana,	5,000
Texas;	61,000	Iowa,	5,000
Illinois,	49,000	Pennsylvania,	5,000
Mississippi,	46,550	Maine,	5,000

* Report of State Board of Health.

Minnesota,	$29,000	Kansas,	$4,500
New York,	25,000	Ohio,	4,000
New Jersey,	21,600	South Carolina,	4,000
Wisconsin,	20,500	Tennessee,	3,000
Michigan,	16,145	Rhode Island,	2,700
Alabama,	13,000	Kentucky,	2,500
Maryland,	13,000	Vermont,	2,500
California,	12,500	West Virginia,	2,000
Connecticut,	10,000	Delaware,	350
New Hampshire,	8,500		

It will be seen that Kentucky has placed the princely sum of $2,500 at the disposal of her Health Board for the purposes set forth above—scarcely a sufficient sum to put into sanitary condition one of her smaller cities. 'Tis true that the present legislature has appropriated $10,000 to be used in case of emergency and at the discretion of the Governor. In view of the threatened invasion of cholera it would not be out of place for this Society to ask of the legislature to turn over this amount to the State Board of Health to be used in protecting our people in their health.

"The State can make no other investment which will pay so large a dividend." The wealth of Kentucky lies as much in the health of her sons and daughters as in her fertile fields, fine herds, or rich mines, yet thousands die or lose health every year from diseases which can and ought to be prevented. The heaviest tax which falls on any State, city, or county, under our modern civilization, is that caused by the unnecessary sickness and death of its citizens, and this tax it is certainly the province of the State to diminish or prevent. "If it is important to invite immigration to our State, is it not at least equally important to attempt to preserve the health and lives of our own people already here?"

From a simple commercial point of view, should a single case of cholera appear in Louisville during this year it

would be a financial calamity in comparison with which the expenditure of $10,000 or $50,000 as a prophylaxis would be trivial, and this calamity would not only affect Louisville, but the entire State as well. When with the advent of warmer weather the conditions of travel and germ-development become more favorable, all the possible rigors of quarantine can hardly prevent sporadic cases at least arising within our borders, and every means of meeting the danger should be well provided for in advance. Our State Board of Health stands ready to do all this, but can it be done without adequate means? Medicine now calls upon the people and warns that there must be a municipal and general house-cleaning; that despite all quarantine the possible epidemic is probable, and that at last the only safety lies in internal health and sanitation, in an ability to deal with cases of cholera wherever and whenever they may occur. This ability can not exist without a purified water supply, clean cities, and an everywhere existing machinery of local medical policing that, to speak plainly, nowhere exists. The care of the public health must be taken out of the hands of ward politicians and put into the keeping of men who are fitted by study, by experience, and by morality to solve the tremendous problems of the prevention and the cure of disease. The mechanisms and methods of such solutions must be permanent; they can not be created in a few days by a panic-stricken populace or by bouffe politicians, but they are the products only of many years of virile and conscientious intelligence. When the present danger has passed the permanent danger of the future will then be present.

PRACTICE OF MEDICINE: A REPORT.

By J. B. Marvin, B. S., M. D.
Louisville, Ky.

While no "epoch-making" discoveries have been announced since our last meeting, yet I think substantial progress has been made in several directions, and I shall very briefly call your attention to some of the more important advances, offering no apology for the rather sketchy outline presented; as I take it, it is the purpose of these reports to give brief summaries of progress during the year in the various branches of medicine.

Our friends, the surgeons, puffed up with their marvelous success, and desiring new worlds to conquer, have attempted to wrest from the practitioner nearly every region of the body. One of these attempts is to classify all the affections about the cecum as appendicitis, claiming it as a surgical affection. The pendulum is swinging back, and I believe a more conservative view will prevail. The majority of these cases can be managed by the practitioner, though in a proportion of cases surgical interference is absolutely necessary.

Likewise the *furor* of craniectomy is subsiding. In a majority of instances the operation is irrational and ineffectual, the operator losing sight of the fact that disease of the brain arresting its development is the cause of thickening or other manifestations of want of development of the cranium. Removal of parts of the bony framework can have no possible good effect on brain massed, atrophied, or sclerosed by previous disease.

Cholera has occupied a large share of professional attention at home and abroad. Every doctor is besieged with the query as to the probability of an outbreak in this country the coming season. Let us look at some of the lessons of the last outbreak. There were two outbreaks of cholera, one beginning near the Seine River, April 4, 1892, and spreading over France to the northeast, and the second coming from the far East in March, via Afghanistan, Turkistan, and Persia, into Russia, thence to the Baltic and North Sea ports to Hamburg, the two meeting at Antwerp and spreading to North America and England.

There can be no possibility of cholera without the comma bacillus; and it is equally obvious that the entrance of the bacilli into the system does not necessarily give rise to cholera. It is only when the system is in such a condition as to offer a culture medium for the bacillus that it will develop and produce cholera.

There are two extreme views as to the condition to which the greatest importance should be attached in this disease. First, that the sole etiological factor is the comma bacillus, and second, that the greatest importance is by some attached to local and prevailing conditions. As is often the case the truth lies midway between the extremes, and to both these factors and to personal predisposition due importance must be attached in considering the prevention and cure of the disease. There is no doubt but that to prevent the introduction of the bacillus is to prevent the development of cholera. This is accompanied by isolation of the sick and disinfection of the excreta and every thing that comes in contact with them. During the epidemic in Hamburg there were 18,562 cases of cholera, with a mortality of 7,939, or 42 per cent, and in Kassan, Russia, the mortality was 51 per cent, although the treatment was by the most advanced scientific methods. A

great deal has been said about antitoxic injections. Some investigators have been experimenting in this line upon the lower animals, and it has been claimed that a number of them have been rendered immune to the comma bacillus. Klempera found serum from blood of the goat to be the most effective. Haffkine, a very able man from the laboratory of Pasteur, and now in India, claims to have isolated from the cholera bacillus certain antitoxines, proteid compounds, albuminoses, or whatever you choose to call them, by means of which he has rendered animals immune, and it is claimed also by the public prints—no report having appeared in any medical journal so far—that in India he is meeting with success. I am inclined to believe that success will be greatest at the outset, and the longer it is tried the less effective it will prove. It is rather irrational to expect that by the inoculation of the toxic products of the bacillus in a disease like the cholera immunity can be secured. If one attack of cholera gave immunity we might have greater hope from this treatment. So-called "intestinal antiseptics" are the will-o'-the-wisps of the present progressive therapeutic age. Salol, creolin, naphthalin, etc., have all failed, and calomel seems to be the best and probably the only antiseptic intestinal remedy. Hydronaphthal has been proposed by Stewart on theoretical grounds. Enteroclysis has been tried, and tannin injections have been used, two ounces to the gallon, water being heated to 104°. But still where this treatment was used there was a mortality of 52 per cent. Subcutaneous saline injections have also been used without much success. A saturated solution of camphor in oil, 20 to 30 drops, injected hypodermatically every hour has proved a valuable stimulant.

It is of the greatest importance that the water supply should be looked to. It is a well-known fact that cholera

is a filth disease, and it seems to have a peculiar affection for certain classes; and the man who worships most at the shrine of Venus or Bacchus, or spends his substance in eating, drinking, and riotous living, puts himself certainly in the best possible condition for the entrance and destructive action of this microbe.

All have heard of Pettenkoffer's experiments in bacteriophagy, he going to the other extreme. I think, briefly, I can make this statement very positively, that the comma bacillus, while heretofore accepted as a laboratory fact, is now put on a firm footing and acknowledged by every one as the essential etiological factor of cholera. Without it we have no cholera; but the other proposition is equally true. I do not believe in exalting alone the bacillus; there must be the predisposition, and suitable soil and suitable climate—seed, soil, climate—and the mere swallowing of cholera bacillus cultures, as done by Pettenkoffer and Emmerich without the development of cholera in them, proves nothing whatever. The lesson of the Hamburg epidemic was that only three per cent of the people there had cholera. Pettenkoffer said he was old, toothless, diabetic, and still he swallowed the bacillus. If he had added that he was garrulous and had outlived his time, I think he would have done better.

Quarantine as generally practiced in times of peace is brutal and inhuman. As cholera is not indigenous to this country, rigid inspection at our ports of entry is of the greatest importance. Separate the sick from the well, keep the suspects under surveillance, destroy infected clothing and other articles, keep discharges of cholera patients from entering water supplies, and the disease can not prevail in this country. Inland quarantine is a delusion and a snare. Let each community observe the ordinary laws of hygiene, looking especially to a pure, uncon-

taminated water supply, and there need be no fear of the disease. Cholera is a water disease; it may be drunk or taken into the alimentary canal by food, but it can not be caught. I trust we shall never have a repetition of the barbarities practiced in New York harbor last year.

It has been claimed since our last meeting that the bacillus of measles has been discovered. It is a curious fact that the most contagious of the zymotic diseases are the ones about which we know the least etiologically. The bacillus of epidemic influenza (*la grippe*) seems also to have been discovered.

I will call attention very briefly to the recently discovered function of the thyroid in destroying or neutralizing some *materies morbi* in the blood. Remarkable results have been obtained in myxedema by the injection of an extract of this gland, slightly cooked; great amelioration of symptoms having been obtained thereby. The pathology of this disease is still in doubt. Acromegalia is a disease allied to myxedema. Great caution in making the diagnosis is necessary in various ways. The latter has also been treated by injections of the thyroid gland. Out of this has sprung a therapeutic delusion, in my opinion, which might be designated as sarco-therapeutics. You read a good deal in this country about Hammond's and others' use of cerebrine, cardine, etc., and claiming as a result almost to have discovered the elixir of life. It seems now that the miracle of transubstantiation is reduced to a formula, and the physician is brought face to face with the naked flesh. I, for one, would rather eat my meat cooked.

We have distinguished during the past year more clearly than ever before certain diseases, malaria, dysentery, and cancer, as not being bacterial at all, but as having for their cause animal, not vegetable, parasites. Malaria is

dependent for its cause upon a plasmodium or the ameba malariæ; and, in the examination of the blood in malarial and all febrile troubles in which diagnosis is in doubt, it is important to distinctly diagnose these as differing from typhoid diseases.

The amebæ coli have been studied considerably and well worked out in this country, and their connection with dysentery and hepatic abscesses has been settled. In the latter it would seem that this parasite wanders about, punctures the gut, travels across the peritoneal cavity, and enters the liver in that way, and does not, as was formerly taught, pass up the blood current or the lymph channels.

Cancer is also claimed now to be a parasitic disease, but it would take an hour to give arguments *pro* and *con* for the existence of the parasite of cancer.

Following directly on the heels of sarcology a different form of therapeutics should be mentioned, which is attracting a great deal of attention, and certainly seems to hold out the promise of great usefulness, that is the specific treatment of infectious diseases by the injection, hypodermatically, of antitoxines; and in a recent publication in regard to blood serum and therapeutics we read about immunity toxines, antitoxines, phagocytosis, etc. There are three theories here: first, the exhaustion theory; that is, when a man has any one of these infectious diseases the parasite, whatever it is, eats up or destroys something that is there and exhausts it, so that when the parasite again enters it can not find pabulum. That theory will not bear the test of criticism. The next theory is that of retention of antidote; this theory is also untenable; that is, the parasite secretes or generates something that is retained in the tissues and makes one immune. The third theory is the so-called tolerance theory; that is, that the system acquires tolerance or resisting power. This is more plausible. To

my mind, however, phagocytosis is more probable than any of these theories, and if you will take the tolerance theory and the phagocytosis theory together, combine them, I believe you come nearer to getting a true idea of actual and acquired immunity.

Everybody believes a number of facts about inflammation which are common and trite. Metchnikoff radically differs from all other pathologists in some respects. He says that inflammation represents the reaction, so to speak, of the organism to irritants; that it is a matter solely of cells. He dethrones the idea of the preponderance of the nervous and vascular mechanism. These cells are lymphoid in character, and the irritants have the power of drawing the cells to themselves, called chemiotaxis. Having reached the irritant, be it a microbe or toxine, the cell devours it and renders it harmless. The cell is therefore a phagocyte, and inflammation is therefore a phagocytic reaction of the organism to an irritant. The legitimate deduction from this is that there are different kinds of leucocytes and irritants, a variety of chemiotaxis, and different kinds of inflammation, tuberculous suppuration, etc., and that inflammation can not be idiopathic, but must have for its cause some poison or infection or irritant. An inflammation tends to subside, it can not be kept up unless the cause is continued. If the phagocyte destroys the cause, the inflammation must cease; it can not be idiopathic, it can not be continuous, therefore we are all wrong in classing certain diseases as chronic inflammatory. If this theory is accepted, chronic diseases, like chronic hepatitis, nephritis, etc., are misnomers, and now must be classed as degenerative.

DISCUSSION.

DR. J. N. MCCORMACK: Naturally I am interested in that portion of Dr. Marvin's paper devoted to the discussion of cholera, which embodies the latest and best views in regard to the pathology and means by which the disease is propagated. I think it is generally conceded by the best authorities, both in this country and abroad, that, so far as we are concerned on the Western Continent, there are three factors essential to the prevalence of the disease: first, that it shall be imported more or less directly from the only place on the globe where it originates, that is, India; second, that there shall be persons infected by the disease, or things infected by persons who have the disease, by which it may be carried from place to place; and third, such unfavorable local sanitary conditions as will favor the location and spread of the disease, and the development of the germ should it find its way into any particular locality. It might be of interest for me to state briefly what is being done by the State and national authorities to prevent its introduction and spread in this country, and then to emphasize in a few words the importance of such action on the part of the health authorities and the medical profession and the people of the country, taking such active steps to improve local sanitary conditions that the germs of the disease will fall on sterile soil should they reach this country. I do not think there is any intention upon the part of any authority charged with the administration of any quarantine laws to enforce the harsh and oppressive kind of quarantine to which Dr. Marvin refers and against which there is such a just and well-founded prejudice in this country, and for the old quarantine of detention has been substituted in most of the great progressive nations of the earth a system of quarantine observation, especially with reference to cholera, which has for its intention keeping persons who have been possibly exposed to the disease under observation when they come into any new community, so that if they should unfortunately develop the disease they themselves may be kindly cared for, and cared for in such a way that the community may be protected. In accordance

with that idea our own National Government, acting largely at the instance of the various State Boards of Health, has stationed medical experts at all the important ports of embarkation in Europe through which emigrants come to this country, and every emigrant now coming to the country is furnished at the port of embarkation with what we term an international health ticket, which is numbered with punch marks easily and rapidly made, because these physicians have to handle a great many emigrants, 8,000 sometimes arriving at New York in one day. An emigrant, leaving St. Petersburg and coming to Frankfort, when he reached Hamburg would be furnished by a medical inspector there with a health ticket which would say whether or not at the time he left St. Petersburg he was infected with cholera, whether or not he had baggage, and if so, whether it had been exposed to infection, and if it had been disinfected, and if disinfected, how. It would say how many days he had been detained at Hamburg before he was allowed to embark for this country; it would show the number of times that he had passed inspection while on ship-board, and the number of days that he had been detained at the port of New York. For instance, if he entered that port before he was allowed to take passage by rail for Frankfort, it would show then if the danger was sufficiently imminent to have railway inspection service established, for which the machinery is all arranged; it would show the number of inspections he had been subjected to from the time he left New York until he reached Frankfort, and when he reached Frankfort, printed in various languages would be instructions to the health officer of the city of Frankfort to receive the ticket, which would be surrendered to him, and there the emigrant's name would be transcribed and the location of the house in which he was to stay would be taken, and thus he would be easily kept under a kind of sanitary supervision, so that if he should be taken sick he could be handled at once safely and humanely and kindly, so far as he was himself concerned, and with safety to the community. Should a man come to Frankfort to-day who had been exposed to cholera, and that fact were known, we believe, if upon the development of the first symptom of the disease every discharge from the patient's stomach and bowels and

every thing that could be possibly soiled by them were disinfected or destroyed, and due care was exercised upon the part of the attendants, such as washing the hands with disinfecting solutions, washing the lips and throat before any food was taken, with the use of all those precautions which are now so well understood by the medical profession, that the chances for the spread of the disease would be reduced to the minimum, which would be almost *nil.* These arrangements have been perfected with great care, and, as I say, the machinery has all been devised and will be put in operation in the event of an emergency, so that so far as the supervision of emigrants and persons coming from infected countries and infected places is concerned the regulations will be most satisfactory. The same rules would be put in operation if cholera should develop in New Orleans or New York, or if it should become epidemic at any of those points. But, unfortunately, we know from experience in past epidemics that with all these precautions in force, if the disease once reaches our shores and becomes epidemic at any point upon the continent, the means by which it is spread, the possibility of patients who have been exposed avoiding quarantine regulations or inspection, render the danger very great; that a man exposed in New York, owing to the long period of incubation of the bacillus, would be enabled to travel to Louisville, St. Paul, or Omaha before the disease would develop; that there is no means known by which it could be detected during the period of incubation; that in very many cases the cholera diarrhea produces so little sickness that it would escape observation even when the patient was infected by the disease itself, and yet that patient would be liable at every point where those dejecta were deposited, if local conditions were favorable, to establish a fresh center of infection.

SURGERY: A REPORT.

By M. T. Scott, A. M., M. D.
Lexington, Ky.

Our science is becoming more exact and far-reaching in direct proportion to our rapidly increasing knowledge. The briefest *resume* of the surgical procedures and modifications of the last twelve months would occupy far more than my share of time and would weary you to an intolerable degree.

I will promise, therefore, not to enter into the details of operation. I will advocate no special treatment of hysterotomy, stumps, or ovarian pedicles. I shall not describe symphyseotomy, prostatectomy, or talk about the toilet of the peritoneum. These are all important, so important indeed that proper description of any one of them would carry us to the limit. Some of these are on our regular program, others will receive attention in voluntary papers. Committees on surgery have existed from the birth of medical societies. It is a time-honored custom, and will likely obtain until medical associations shall have an end.

This is a year in which the eyes of the world are turned on America. Her wonderful achievements, her skill and progress are the marvel, the admiration of Christendom.

Our country is in its infancy as compared with European nations. Our civilization dates back four hundred years; our surgery only runs back to the beginning of this

century. Prior to 1800 no discoveries or inventions had been made, but since then it can be truly said that mighty works have been accomplished.

In 1820 Sidney Smith, the literateur of the early part of this century, wrote as follows in the Edinburgh Review: "Americans have done absolutely nothing for the sciences. What does the world *yet* owe to American physicians or surgeons?"

Let us now consider briefly and without further preface, not what America has done in the nineteenth century for surgery, but what a flood of light has been thrown on our art by the courage and skill of Kentucky surgeons. It is an oft-heard remark that Kentucky is behind the times; nothing could be more unjust; she is not behind the times and never has been. In the past she has so far preceded the surgical world that those who followed lost sight of her and imagined her behind them in the race.

Eleven years before Smith asked, "What does the world yet owe to American physicians or surgeons?" a Kentuckian in the remote backwoods of this State had dared to attempt and carry to a successful termination an operation, nay, operations, that the most daring and successful men of the world shrank from with fear. We can not adequately conceive of the influence of McDowell's ovariotomy on the whole field of abdominal surgery. He first disabused our minds of the notion that the peritoneum was a sealed book only to be investigated on pain of death. He had no anesthesia, antiseptics, skilled assistants or trained nurses at his call; no precedent guided him, no text-books counseled him; but still, with a sublime courage of his convictions only equaled by that perfect faith and confidence shown by his patient, a Kentucky woman, he operated. His lofty courage was shown, not only by the cool manner in which he undertook the most formidable operation ever done, but

also by his calm demeanor before his infuriated neighbors, among whom his intentions had been discussed, and by whom his rashness had been condemned. Even while operating, we are told that their denunciations could be heard without. It has been said that had he failed, or had Mrs. Crawford died, McDowell's life would alone have appeased the angry mob.

His reports were received with incredulity and derision by those who should have applauded him and wished him godspeed in his explorations in a new and untrodden field.

The editor of the Medico-Chirurgical Review, the leading medical journal of the world, said: "A backwoods settlement in America (Kentucky) has beaten the mother country, nay, Europe itself, with all the boasted surgeons thereof, in the fearful operation of gastrotomy with extraction of diseased ovaries." When later on he saw that what he had said in sarcasm and derision had become a mighty and transcendent truth, he had the manhood through the columns of the same journal to apologize to Almighty God and to Dr. McDowell, of Kentucky.

Let us trust that to Dr. McDowell had been given an insight into the future, so that while ridiculed, denounced, and disbelieved by his brethren and the world, he might have seen the path of glory and renown that he had blazed in the entirely unexplored forest of abdominal surgery. Years before the question had been asked, "What does the world owe to American surgeons?" Our State had answered with the grandest surgical triumph of the ages, a triumph that has added many thousands of years to the life and happiness of our mothers and sisters. After McDowell's death ovariotomy fell into disuse for years. His mantle fell on no shoulders equal to the task. It indeed seemed that

> "One vast eclipse the human mind o'erspread,
> And learning slumbered with the mighty dead."

Whenever and wherever the achievements of Kentucky surgeons are thought of, McDowell's deeds rise pre-eminent by the resistless force of his daring and their wide-reaching application.

I have no apology to offer for according him first mention. But while we fondly cherish his memory, let us not forget that other brave men lived and acted in those days. Other daring Kentucky surgeons have left honored names worthy of mention with that of the father of ovariotomy. In 1806, three years before the birth of ovariotomy, Dr. Brashear did the first successful hip-joint amputation on record—an operation for more than one reason the most formidable in surgery.

My esteemed friend Dr. P. S. Conner, of Cincinnati, once told me that he thought the true test of a great surgeon was his ability to cope with sudden hemorrhage. Esmarch's bands, Wyeth's transfixion pins, and modifications thereof, enable us to control hemorrhage in this operation to a great extent, but with all these I doubt whether any one within the sound of my voice would be willing—may I not say dare—to attempt a hip-joint amputation if anesthetics of all kinds were contra-indicated.

Were we called on to do hip-joint amputation as often as we do ovariotomies, we would be remiss if the monument in the old Presbyterian church-yard at Danville did not have a companion inscribed with the name of Brashear. But other names and other deeds press upon us, and time flies.

In 1813 McCreary, also a Kentuckian, first removed the entire clavicle. We offer his memory no affront when we see him tremble at the close proximity of important subjacent structures. How careful are we in this important procedure that the patient shall be thoroughly anesthetized so that no movement shall cause puncture of artery or vein. McCreary's patient was thoroughly conscious.

Stone in the bladder was in former days a most frequent malady; lithotrity was not in general use; supra-pubic cystotomy was not in vogue. Kentucky operators, as usual, were equal to the emergency. McDowell did thirty-two consecutive successful lithotomies, while the elder Dudley rolled up a hundred or more successful perineal sections for calculus without a death. His lithotomy statistics stand to-day unequaled, the wonder and admiration of the world.

Time would fail me were I to attempt to recount the achievements of these men. By their scrupulous cleanliness and elaborate preparations they discounted our modern Listerism.

They saw through a glass darkly, but their great care and thoroughness seem to me the gropings in the dark for the goal of asepsis. While they never understood antisepsis, germs, bacteria, microbes, and various cocci, they were very often aseptic, as shown by union by first intention and uninfected wounds. When these heroes were called into the presence of the Great Physician they left worthy successors, "noble sons of grand sires," who proved themselves worthy of so rich an inheritance.

Let us learn from these examples set us by these men who thought out and executed new things, that the field is still open and invites us to new explorations and achievements. Our advantages are great, and we shall be judged according as we improve our opportunities. We can not afford to allow the rich legacies we have received to remain idle.

We have anesthesia, bacteriological experiences, sepsis and antisepsis understood, lavishly equipped hospitals, and trained nurses. It looks at first glance as though we had it all, except a guarantee that all our patients would recover. Yet how much is unknown. A small surgical procedure, but

none the less surgical, has robbed smallpox of its awful horrors; so far indeed has it been removed from us that we find ourselves reading the accounts of its marches through Europe as though they were the fabrications of a Munchausen. Seeing, then, that vaccinations and inoculations can stamp out dread maladies, let us with renewed vigor turn our attention to the remaining diseases that occasion so much anguish and distress.

Koch's tuberculin inoculations have proved a dismal failure when tested in the fierce crucible of bedside experience. Turn not the finger of scorn and ridicule because his labors have so far been in vain; rather let us believe him an honest and faithful seeker after truth. Every lover of his race should earnestly hope that soon will be found an agent, be it a medicine or a surgical inoculation, powerful enough to cope with tuberculosis, the most potent weapon of the angel of death.

Science has so far given us but little insight into the etiology and successful treatment of cancer, one of the most common, most hopeless, and most distressing diseases. Of all the maladies to which humanity is liable, one of the most mysterious is carcinoma. Why should one part of the tissues which form the human body suddenly begin to grow out of all proportion to the rest, crowding the neighboring structures aside, causing them to disappear by its pressure, and finally seeming to be endowed with a vitality of its own superior to the rest of the body, so that it flourishes with an independent existence, living upon the blood like a vampire until the victim's strength is exhausted and there is an end of both body and neoplasm? This is the question which has baffled scientists and has given rise to theories innumerable. The laws which control the life and growth of the various tissues of the body are still well nigh as great mysteries as they were to the pioneers in anatomy

and physiology. We are still far from discovering how the various organs of the body maintain their due proportion and their form from year to year.

Like the law of gravity and all other great rules of nature, the operation of these laws is so constant and so invariable that their mystery becomes covered with familiarity, and it is only in the apparent exceptions to their working that strangeness appears.

One of the most fascinating of the theories which have been advanced to explain the etiology of cancer is that which supposes that at some time in the development of the body a particle of tissue, intended for one part, the skin for example, has gone astray and been buried somewhere else, and that some accident has awakened its cells to vigorous growth after they have lain dormant for many years. Again, some investigators think that neoplasms may owe their origin to micro-organisms which find their way into the system.

I merely mention these theories to show the vain endeavors of investigators to explain phenomena, the mysteries of which have never been solved.

Who shall unravel the pathological riddles? No sudden inspiration of genius or flight of fancy can achieve success. Patient, untiring toil and research can alone accomplish anything, for

> "The heights of great men gained and kept
> Were not attained by sudden flight;
> But they, while their companions slept,
> Were toiling upward in the night."

Let us then labor conscientiously to contribute our mite to the solution of the problems of disease, being well assured that "to whom so much has been given, of them shall much be required."

If no more, we can at least record our failures as well as our successes. Our art is so wide-reaching that, do what we may, we can only gather a few pebbles by the shore. After we have gone from these scenes a vast unfathomed ocean of mysteries will still remain.

So let us all live that of each and every one it can be truly said:

> "A wise physician skilled to heal
> Is more than armies to the common weal."

OBSTETRICS: A REPORT.

By T. S. Bullock, M. D.
Louisville, Ky.

The yearly reports on the various branches are styled "Reports on Progress." It is a matter of congratulation and a credit to the profession that seldom a year elapses unmarked by an addition of greater or less value to our store of useful knowledge. Former reporters have shown to this Society the predominant influence which has been exerted by antisepsis and its offspring, asepsis, upon the practice of obstetrics. As in surgery, so also in a somewhat less degree has antisepsis given place to asepsis. Both have for their purpose the accomplishment of the same object, as both are but other names for systematic and painstaking cleanliness; as not infrequently both the patient and the accoucheur are the victims of an idiosyncrasy that renders the exhibition of the antiseptic in general use both disagreeable and harmful, the change will be a welcome one. It is the strict observance of these principles that renders possible the simplest operative procedure without an increase in the risk to the mother. A rigid adherence to antisepsis or asepsis enables us to elect operations which have in view the preservation of two lives. One was formerly invariably sacrificed and the other greatly jeopardized. The revival of symphyseotomy, considered by many the greatest advance in recent times, and the success which has attended its revival, together with the new cesarean section, enables

us to confidently assert that embryotomy upon the living child, monsters and hydrocephalics excepted, is a thing of the past.

A brief *resume* of symphyseotomy may not be amiss. It was first practiced upon the living woman by Sigault in 1777. It was received with great enthusiasm, but was so abused and misapplied, and the results were so unfavorable, that it speedily fell into disrepute and was practically abandoned except in Italy, being characterized as "murderous and unphilosophical." Note the results of the first forty operations collected by Dr. Robt. P. Harris, of Philadelphia: Women recovered, 15; died, 25; children saved, 12; died, 28. In addition to this fearful mortality it was found that necrosis of the pubic bones not infrequently occurred, and that lameness often resulted. Contrast with this the results attending its revival with asepsis and an improved technique. In 1892 Dr. Harris collected twenty-six cases; there were fifteen operations in five different countries, and no maternal deaths. The number of children saved is not stated. Up to date there have been fourteen operations in the United States, with two maternal deaths, neither of them traumatic. In no case has lameness resulted, convalescence being complete, and the patient walking without difficulty at the end of a month. As to after-treatment, no complicated apparatus is necessary, the mere fixation of the pelvis with broad strips of adhesive plaster or a canvas binder being all that is needed. The operation itself is not especially difficult. It may be done through an inch and a half incision, and this does not have to be extended through the skin nearer than three fourths of an inch from the symphysis, the rest of the cutting being within, with the Galbiati knife, without injury to the urethra, bladder, pubic artery, or peritoneum. Most of the foreign operators cut from behind

forward, and claim that there is less danger of injuring the urethra and bladder. Dr. Harris advocates this method, but other American operators cut from above downward, and state that the hemorrhage which takes place from the lower end is more easily controlled.

The following is a description of the mode of performing the operation according to Dr. Harris: "The armamentarium consists of a scalpel, a Galbiati knife, hemostatic forceps, needles and needle-holder, gauze, and ligatures. Although it may be performed through a small incision, its length will depend upon the depth, thickness, and direction of the symphysis. A metallic catheter is introduced and the urethra depressed and carried to the right. An incision is made through the skin and fat above the pubes two and a half to three inches in length, ending about three fourths of an inch above the symphysis, and passing to the left of the clitoris. The interosseous ligaments and cartilage are now divided from within outward and below upward. The bones then separate from one to two inches. Dr. Harris, after a thorough and exhaustive study of the subject, states that two inches and a half of separation, on the average, are all that should be claimed as safe in the living woman, although three inches and even more have been attained in operating, where the patients made good recoveries and were able to walk at the end of a month. All the pelvic diameters are increased. The object of the operation is the delivery of a living child with a minimum of risk to the mother, and is to be regarded as a failure if the child is still-born or dies in a few hours.

It has been suggested by Dr. I. Edwin Michael, of Baltimore, that the sphere of symphyseotomy is not limited to pelvic deformities. He says there are cases in which it is more imperatively demanded than in contracted pelves.

There are face presentations wherein anterior rotation of the chin does not take place. In such a case, if version were impossible, with a fixed and jammed chin, nothing could be gained by delay, and formerly embryotomy was the only procedure practicable. He, after experimenting with a fetus and a pelvis with the soft parts attached, is convinced that the operation of symphyseotomy is perfectly feasible, and states that he will attempt to so deliver the first suitable case presenting, and asks that it be given a trial.

The outlook for symphyseotomy is certainly encouraging, and it bids fair to win for itself a permanent and honorable position as a life-saver. The danger is that it will be again brought into disrepute by becoming the fashion and being unwisely and unadvisedly performed. It is certainly a safe operation, and when it is brought into competition with the cesarean section will doubtless carry the day both with the patient and her family. It can never compete with the cesarean section under the absolute indications, but is destined to displace the relative section. The conditions necessary for a successful performance of the operation are, according to Dr. Wihle, of Dresden: "(1) Freedom from infection; (2) the pelvis must not be anchylosed or have an extreme oblique contraction; (3) the fetal heart-sounds must be good. Desirable conditions are that the woman be a multipara and that the soft parts be sufficiently prepared." It is safer than the cesarean section in about the ratio of three to one; but embryotomy is safer than either and will continue to be done, as it requires less skill, and the life of the mother is regarded, and I think justly, the more valuable by far.

The question of embryotomy is one neither of religion nor sentiment, but the average practitioner remote from aid will continue to sacrifice one life rather than risk both by the faulty performance of a capital operation.

In connection with symphyseotomy the question of pelvimetry has been made prominent. Dr. Grandin, of New York, says: "It is the question of the day." When an interne in the Maternity Hospital of New York, in 1884–85, it was routine practice to ascertain the measurements of the various pelvic diameters with a pelvimeter and record them. Since that time the only pelvimeter I have employed or seen employed is the examining finger.

The only embryotomy on the living child I have ever seen was in hospital practice, though I have done it on the dead fetus. There is not a pelvimeter in Louisville to my knowledge, and yet it is seldom a mother is lost or that children are sacrificed, and our results will compare favorably with those of other cities. Accurate pelvimetry is a *desideratum*, and in cities with a large foreign population, like New York, is doubtless a necessity; but those of us whose province it is to deal with native-born Americans have not much need for it.

The tendency of the times, according to Dr. Grandin, is "to make of obstetrics an exact science." God speed the day! He makes an eloquent plea for exact methods in obstetrics, and says that "guess-work and trusting to nature" are no longer to be tolerated. He further says that "it is our duty as responsible men to familiarize ourselves with the configuration of the pelvis of every woman who intrusts herself to our care—a duty not to be shirked, and inexcusable if shirked." We are also to determine as accurately as possible the size of the fetal head. Armed with such information the physician will not make "prolonged and fruitless efforts to drag through the pelvis a child that can only come through at the expense of its life and the integrity of the maternal structures." The upshot of the whole matter, he predicts, will be the introduction into private practice of the exact methods which prevail in the

Maternity Hospital. It is a melancholy fact that as a rule too little attention is paid to pregnant women. How many of us pay any attention at all to such patients unless our attention is demanded by the occurrence of grave symptoms, until they are brought to bed! How many of us even examine the urine at stated intervals! This is not as it should be, and is doomed to radical change. Does the fact that the vast majority of the *gravida* with whom we come into contact have natural labors render us less culpable? It certainly makes us extremely careless. While it is not proper, in my opinion, to regard labor as a pathological process, it might be better to so regard it, if by doing so we were rendered more careful and systematic. While it is not probable that accurate pelvimetry will soon become the universal practice, we should devote more attention to our patients. Our examinations should be more methodical and thorough. The hand is an excellent pelvimeter, and has to be used to determine the true conjugate. We should not be satisfied with the determination of the presenting part, but ascertain also the position, the capacity of the pelvis, the probable size of the fetal head, if necessary even introducing the hand into the uterus.

The exhibition of ergot as routine practice after labor has been practically abandoned, it having been found to exert no special influence upon involution of the uterus. It is only given when demanded.

DISCUSSION.

DR. J. G. CECIL, of Louisville: I am glad indeed that the doctor has seen fit to present to us certainly the most interesting living question in the obstetrics of to-day. We have all read with much interest of the revival of this old operation of symphyseotomy. I must say that until I saw the now improved methods of doing this operation I was much opposed

to it; in fact, I regarded it as entirely unsurgical. I take it that my prejudice arose from the fact that nearly every text-book either condemns the operation or says very little in favor of it. I believe with Dr. Bullock that the indications for this operation are perhaps less frequent in this country among our strong, healthy, well-developed women than in the countries of Southern Europe, especially Italy, where it has its origin. We seldom see those deformed women that demand the great obstetrical operations for delivery. I can not recall in my obstetric experience many cases in which this operation would have been suitable. The class of cases which in this country we will find demanding operation are those in which every diameter of the pelvis is shortened, and I believe that this operation will be found advisable in many cases in the place of the dangerous and sometimes fatal use of the forceps, fatal especially to the child. I, for one, hold myself in readiness now to perform this operation in suitable cases. I do not think that in badly deformed pelves it is as good an operation as the improved cesarean section, and if I should be called upon to decide in favor of an operation in a case of very oblique pelvis I should certainly favor the Sænger operation.

DR. M. F. COOMES, of Louisville: The operation would seem to be called for under certain very rare circumstances, but during a number of years of obstetrical practice I never found a case in which I thought it was demanded, in which some other operation was not equally as good. I think in all cases where the forceps can possibly be used they should be used, since they involve no mutilation of the mother. In an extreme case I believe I would be tempted to do craniectomy rather than perform the operation of symphyseotomy. There may be cases in which this operation would be appropriate, but I have never seen one. However, Dr. Bullock's paper gives the present views of the profession in the matter, and the operation may be the coming one.

GYNECOLOGY: A REPORT.

By John G. Cecil, B. S., M D.
Louisville, Ky.

Without undertaking to consider the modifications and improvements in detail of the various operations in the gynecological field that may have been suggested since the last report was made to this Society, it will be the aim of the present paper to present for your attention the trend of current opinion of the status of this important and ever growing specialty.

The tide toward conservative work in gynecology has set in in no unmistakable manner. It is assuredly gratifying to all not afflicted with the cutting fever to see men of ripe experience and sound judgment entering strong protests to the promiscuous unsexing of women, and the relegation of all obscure pelvic or abdominal affections to the relentless arbitration of the knife. During the past twelve months current literature has not abounded so luxuriantly in articles under such captions as "My First Hundred Laparotomies," "My Year's Work in Gynecology," "My Last Twenty Cases of Hysterectomy."

The time has come when something more than the simple enumeration of so many cases with so many successes and so many failures is necessary to establish an enviable reputation as a gynecologist. The ability to cut a hole in the abdominal wall, pull up, ligate, and cut off a pair of innocent and unoffending ovaries and tubes in just so many minutes is not of a truth the mark of a great pelvic sur-

geon. This day and age demand more; the demand is careful and painstaking examinations, clear indication for operation, a reasonable promise that the proposed surgery will give relief. "To open or not to open" is not so much the question as "Why should I open, and what good will be accomplished by so doing?"

A word in this connection concerning exploratory incision will be permissible. In these latter days of clean surgery this can not be regarded a dangerous procedure, but has not this inestimable privilege achieved by the spirit of modern progress been sadly abused? Has not this been resorted to before the other and less heroic methods of diagnosis have been exhausted; and have not the abdominal and pelvic cavities been explored to find something which could not before be found, a something of which there existed very vague evidence? Have not appendages been brought to light that were innocent of disease and guiltless of offense; and have not these same appendages been sacrificed, because forsooth the hunter did not wish to return empty handed? I verily believe it requires more courage to drop a healthy ovary, whose personal character has been under suspicion, back to its place and close the incision than it does to make a complete operation. A more critical study of pathological and normal specimens would be productive of great good, and would prevent repetition of this mistake. Such is the abuse that this very necessary diagnostic measure has suffered.

The time has also come, after a quarter century of brilliant and apparently successful surgery whose parallel is not approached in all the preceding centuries, when we ought to hear more of the ultimate results, more as to what time, that great solver of problems, has wrought for that fortunate whose medical history is recorded somewhat after this fashion:

"Mrs. X, white, aged thirty, primapara; great sufferer for three years from dysmenorrhea. Operation October 20, 18—, by Dr. A, assisted by Drs. B, C, D, and E; E giving the anesthetic. Both tubes and ovaries, which were cystic, removed. Drainage-tube for fear of hemorrhage. Time, twelve minutes and thirty seconds; tube removed second day; stitches out eighth day; discharged cured fifteenth day—being the seventy-third in my second series."

Every one in this audience would read with keenest interest a paper by Mr. Tait or Mr. Keith giving a retrospective account of his first hundred cases, with remarks as to the final outcome in each case.

Many are the trachelorrhaphies that have been done on slight lacerations, for the cure of nervous manifestations, that have been utter and dismal failures; nay, more, that have resulted in a condition more deplorable than the original, and demanding abdominal section for relief from the damage directly attributable to the trachelorrhaphy. Many dilatations of the cervix uteri and curettings of the endometrium have been followed by lasting injury in the shape of pelvic peritonitis. Many restorations of the pelvic floor were restorations that did not restore.

It is an easy step from this to a brief mention of the criticism that has been heaped upon the heads of the minor gynecologists and general practitioners by the major operators for this indiscriminate use of the sound and iodine-tipped applicator. A defense of these unfortunate gentlemen is not called for at my hands. They are abundantly able to take care of themselves; but I never could understand why the cutter should bear down so hard on the goose that laid the golden egg. Perhaps it would be as well for him to give attention to harvesting his own luxuriant crop of sins. To a man with even a dull imagination, who had never seen a uterine sound, a recital of the horrors that

follow its ordinary use would picture to him an instrument as complicated as a type-writer. But seriously, while it is conceded that the uterine sound has a very limited sphere, that the vaginal speculum may sit on too high a pedestal, and that local applications to the uterine mucosa are often not only useless but harmful, very much that we see in print and hear in society discussions as to their baneful influence may be justly characterized as gynecological demagogy.

The year past has developed a more conservative estimate of the very formidable operation of hysterectomy for fibroid tumors. The simple existence of a benign growth of this character, the diagnosis of which is usually not very difficult to make, does not justify the risk attendant upon so dangerous an operation. Too many women have carried these tumors through scores of years, living useful and happy lives, to make a plea for their universal removal tenable. The indication for extraction must be plain and urgent. Some of the reasons justifying an operation are: Profuse, obstinate, uncontrollable hemorrhage; unmanageable interference with the function of neighboring viscera; great size of the tumor, making life useless and burdensome, and pronounced general depreciation of health, attributable to the growth. The less formidable operation of removal of the ovaries is to be preferred in the majority of cases demanding any interference.

A striking feature of the mutability of times and minds is the rapid growing distrust of antiseptics. A new antiseptic idol is no sooner set up than it is thrown down and broken. The simplicity of the master operators is simply admirable. The only two agents that defy the attacks of time and the idol-breakers are soap and water. The sterilization of instruments, hands, dressings, etc., is so simple that no one should err. The germicidal agents that for

years have been deemed indispensable now either play an insignificant rôle or are consigned to the limbo of not only useless but harmful trumpery. Our best lessons, truly, are learned through our mistakes.

Another and hardly less important lesson in the after-management of surgical cases is the almost universal abandonment of the use of opiates. Very few cases are benefited by or really demand the hypodermic use of morphia that for a long time was so generally administered. Some of the reasons that condemn its use are prolongation of the nausea and vomiting from the anesthetic, the delay of prompt reaction, the arrest of the secretions, and the masking of important symptoms as they may arise. Nature untrammeled is the best restorer. Quite a lengthy article might be written upon the abuse of opium, or the advantages of not using it in surgery.

Operators who sacrifice thoroughness of detail to haste, or who operate against time, generally have occasion to repent at leisure. Not one moment more than is necessary should be taken, but to take less is exceedingly unwise. Much otherwise good work must be undone because of undue haste, and, on the contrary, many failures may be assigned to continued exposure of viscera, needless delay, and faulty preparation.

More and more is the gynecological field being narrowed down to operation for organic disease. Psychical and functional disturbances are seldom benefited by surgical measures. This view is now so generally admitted that further discussion of it is unnecessary. Closer attention on the part of the general practitioner in following up cases of gonorrhea until thorough cure is established, and unvarying adherence to thorough asepsis in the management of labors and abortions, will do much to limit the necessity for gynecic surgery. Could these two prolific sources of

pelvic disease be eliminated, a large proportion of the work of the pelvic surgeon that now is imperative would be forever relegated to the history of the past.

DISCUSSION.

DR. J. M. MATHEWS, of Louisville: I quite agree with the author that a great deal of unnecessary surgical work has been done by gynecologists, and perhaps by other surgeons; but we must all admit that if we condemn exploratory incision as a rule we leave untouched and consequently uncured many hundreds of women that could possibly be saved by an operation. I like conservative surgery; I am an advocate of it; but by the wholesale to denounce the methods that are adopted to-day I believe is unscientific. Dr. Cecil well recognizes the fact that in the special surgery to which he is devoted it is quite agreed that exploratory incisions are advisable. I do not believe that any gynecologist or other surgeon can determine before an operation is done whether there is a pathological change existing or not. I will only cite you to the operations that are done for the removal of the appendix. We know how vague are the symptoms, how often we are mistaken, and consequently we have relied upon a medical treatment of these cases until the termination has been a fatal one, and the autopsy has revealed the fact that by an operation such a case or cases could have been saved. I ask you, in this case, if an incision here, under these circumstances, would not have been justified? In many cases no doubt there are presented to the gynecological surgeon pathological conditions after he has entered the abdomen only; and not before the incision has been made can he tell of the adhesions, etc., that may exist outside of any well-defined tumor that any surgeon could diagnose; that it is then and then only that he can tell what operation is justifiable; and in many cases, if the operation had not been performed, there would have been a fatal result. In other words, I imagine that exploratory incisions are frequently absolutely necessary; that there are many cases presenting themselves to the surgeon where, if he waits for plain evidence of a pathological change existing in the abdomen, he will fail to get it; and,

recognizing the fact that the simple opening of the abdomen or exploratory incision in this day of modern surgery is a very simple matter, the surgeon is justified in resorting to it for diagnosis alone.

A word as to the author's reference to the antiseptic and aseptic precautions employed in these cases. It may be true that soap and water can accomplish what we want, but I believe with Sir Joseph Lister that aseptic surgery is, to say the least, impracticable. In a majority of cases wherein the gynecologist especially is called to do his operations, in the homes of the poor certainly, and often in the homes of the rich, he can not follow out any recognized rule of aseptic surgery. I can not quite understand why it is that the gynecologist more than any other surgeon is fighting the so-called antiseptic treatment of wounds, or the precautions as taken in all operations in surgery. It can not be doubted that the introduction of antiseptics or chemicals into the abdominal cavity should not be practiced, but in the general treatment of the operation and preparation of the woman preparatory to delivery, and to prevent the sequelæ the author speaks of, I can not compreprehend why he should rule out antiseptic precautions. I believe that antiseptic precautions are with us to stay, because these precautions accomplish more than soap and water can. Cleanliness is well, if one can get surgical cleanliness, but I doubt if in simple obstetrics or gynecology one can often obtain this thorough surgical cleanliness. Therefore I am in the habit of advocating and practicing the use of antiseptic solutions in my teaching and work as a surgeon.

DR. H. H. GRANT, of Louisville: It occurs to me that a great part of this criticism has been directed not against the competent surgeon but against those who make inaccurate diagnoses, or can not institute the proper surgical procedures after an accurate diagnosis is made. Dr. Cecil says the advance of the past twenty-five years can not be paralleled. He refers to this progress as growing out of improved technique, but he does not mention what is the outcome of this—that all forms of putrefaction are the result of germs, and that putrefactive changes are not only prevented by cleanliness, but may be held in check by the germicides. If this be true, then, failing

to prevent the access of the germ to such structures as favor their development, we have still in our hands powerful agents for their destruction. Much the same sort of objections were made when the old stage-coaches were abandoned for railroads. Many who failed to see the advantages that were to be obtained by the new method deplored the loss of the pleasant means of traveling afforded by the stage-coach, and took to the railroad with manifest regret. It is possible to see that, while means of asepsis are more or less effective under favorable circumstances, we will have an additional aid to progress in the means that are offered us in the destruction of germs established in the fresh wounds made not only by the gynecologist but by the general surgeon. In a recent paper published by Prof. Rein, of Paris, comparison is made between certain results that are obtained upon patients subjected to all the careful means of asepsis. Patients brought before him are rendered thoroughly aseptic, not only by soap and water, but by germicidal means. Thus, when the abdominal cavity is opened the immediate incision is mopped with sterilized gauze, which is subjected afterward to microscopical examination, as well as to the measures of cultivation of probable germs that might have found residence on it. After the operation is completed the surfaces of the intestine and the immediate incision are again mopped. This gauze is also subjected to the same means. Out of twenty-three cases treated in this way, nineteen cases wherein the gauze was applied to the fresh incision failed to show any evidence of germs. When, however, in these twenty-three cases the fresh surfaces were mopped with gauze after the operation (these surfaces having been exposed to the atmosphere for a period of fifteen or twenty minutes) the gauze in seventeen of them showed upon culture evidences of germs. Than this there can be no more positive proof of the fact that it is impossible, even if thorough asepsis has been provided in the beginning of an operation, to prevent the access of the germs to the wound during the period of its exposure to the atmosphere. In removing, then, these causes, in wiping away these germs, in preventing the accumulation of septic material that results when these germs have access to a fresh wound, we demand and are in need of some other

means than asepsis, and these means are offered to us in the germicidal solutions which have been recommended to us, and which have been tried and found to faithfully accomplish all the indications. For this reason alone, if for no other, it appears to me imperative that we should retain these means under all conditions favorable to applying them. Although I have no authority to speak on that subject, it may be that in the abdominal cavity, under such conditions as Dr. Cecil usually operates, it is unwise to apply strong germicidal solutions. It is not my habit under any circumstances to apply them there; but if this is the case, there is no reason for sweeping away from us the great safeguard that we have in the germicidal solutions applied under other circumstances of general surgery; and I regret that there should be advanced in the presence of this Society such a proposition, and that a position should be taken so strongly as Dr. Cecil has taken his in opposition to the known advantage and the very great potential aid that has been derived from the application of these principles. I should be very sorry if any member of this Society were to hesitate either to apply a germicidal solution to the fresh wound in a safe locality, or to irrigate any septic wound with a strong germicidal solution because of the recommendations of Dr. Cecil. Although he does not say that he restricts these observations entirely to abdominal surgery or to gynecology, the inference is very naturally drawn that because he believes they are inefficient there they are inefficient elsewhere. I commend the paper heartily in as far as it applies to conservative surgery, but there can be no conservative surgery which partakes in any way of ignorance; there is only one class of operators who can expect to rise to any degree of prominence, and that is those who have the proper attainments. My objections, then, to the paper are two-fold: that instead of objecting to ignorance he applies his objections mainly to the conceit of the operator; and in the second place, that he excludes from general surgery what it appears is possibly inappropriate in abdominal surgery.

DR. W. L. RODMAN, of Louisville: I thought, as I listened to the paper of Dr. Cecil, that I had never heard a better one or one more to the point. I think that the applause with

which the paper met indicates that there is quite the same feeling among a large number of gentlemen here who are tired of being called surgical tinkers by a few prominent gynecologists in the country because they do not send all their cases to them to undergo abdominal section or other important operation. There are a lot of gentlemen in Philadelphia who apply that word in a very general way. Everybody is a surgical tinker who can not do one hundred and seventy-five laparotomies and hysterectomies in a month. I think, if we had more papers of this kind, that real, true, substantial gynecology would advance far more rapidly than now.

I was struck with so many things in Dr. Cecil's paper that I hardly know where to begin to discuss them. I was first struck with the point that it would require far more moral courage for a surgeon to replace a healthy ovary after opening the cavity than to remove it. I have seen it removed time and again, and so has Dr. Cecil, and so doubtless have those gentlemen who have just spoken. It is time to call a halt in these cases. Dr. Cecil also speaks of the fact that some of these gentlemen would refer every case of uterine fibroid to the knife. They are condemned to the knife when they are not bigger than the fist. Everybody knows that their removal by this means is one of the most serious operations in surgery, and everybody with an elementary knowledge knows that a fibroid tumor never killed anybody anywhere, except in a few cases, possibly, where it caused twisting of the gut or incessant vomiting, as in the case of very large tumors. Nothing is more benign or innocent than a fibroid, and no operation is more serious than hysterectomy done for its relief. Homans, of Boston, undoubtedly takes the proper position in these cases, and he has seen more fibroids than anybody in America. After reporting many hundreds of these cases, in a paper read before the last meeting of the American Surgical Association, he stated as his conviction, borne out by years of experience, that but one in ten should be condemned to the knife. Now, when a man of Dr. Homans' great ability talks in this way, and says he is not willing to operate on more than one in ten, what are men to say and do who have very much less experience than he has? All honor to gynecology, and especially to

American gynecology, which is to-day leading the world and has been in the lead for many years; but surgeons in this department are undoubtedly going too far when in innocent troubles they attempt relief by a serious operation which has perhaps a mortality of twenty-five per cent in the very best hands.

While I believe that much has been done by antiseptics, that is, the use of chemical agents to obtain chemical cleanliness, I must concede with Dr. Cecil that the tendency in surgery to-day is undoubtedly in the direction of asepsis rather than antisepsis. I think Dr. Cecil was misunderstood; I do not think he intended to say that chemical antiseptics did not have a distinct field in surgery. But I understood him to mean that in ordinary fresh, surgically clean wounds these chemical agents were not proper. I believe more women have been killed by having bichloride of mercury poured into the abdominal cavity in the strength of 1 to 500 than have ever been benefited by it. No one now ever uses it in the abdominal cavity, and that is the best proof of the fact that a great many people have been killed by it. It has no longer any place in abdominal practice. I think Dr. Cecil is quite willing to admit that in the cases that Dr. Grant speaks of, cases that we recognize as essentially septic and full of germs, the use of bichloride of mercury or some one of the chemical agents is proper, just as Dr. Grant claims. He simply meant that the trend was in favor of asepsis rather than antisepsis. Another point well taken in the paper is that morphia is used too liberally in these cases.

DR. M. F. COOMES, of Louisville: I arise to commend Dr. Cecil for one thing if for no other. I was much charmed with his excellent paper, and with Dr. Rodman I think he was misunderstood. I inferred from Dr. Cecil's paper this much, that if we would all report our mistakes, in other words, make the report of unfavorable cases as accurately and as fully in detail as we do favorable cases, medicine and surgery would advance much more rapidly than now. The cases that result unfavorably we can always learn important lessons from, but not so often can we learn such lessons from the cases that result favorably. A surgeon's report thus, "In my last seventy-five

unfavorable cases I had such and such results," would be odd reading, but it would stand for substantial progress in surgery.

DR. J. G. CECIL: I would rather be damned by faint praise than be passed by unnoticed. I was surprised, however, at the position taken by my friend Dr. Mathews; he must have misunderstood me, certainly, in regard to exploratory incision. The point I wish to make is, that I believe that this is not a dangerous procedure in the hands of careful men with the ordinary surroundings of clean surgery. I said that it was a very necessary procedure; but I said that it ought not to be resorted to until all other and more exhaustive and less heroic methods had been pursued. I further made this comment, that I believed it had been sadly abused by good operators, and by men who were seeking for something of which there was vague evidence; having perhaps exhausted every avenue of investigation, they had recourse to this as the last resort. This is proper, and I do not object to it. I said that the abuse came in this way: that tubes and ovaries are sacrificed when there was no evidence of disease in them. I have seen that done all the way from New York to Louisville. I have seen it done by the best operators. I have seen the exploratory incision abused in the same way, and I make that point against the practice. I do think it is more courageous and evidence of better surgery for a man to pull up an ovary after an incision, investigate it, and if it is not diseased put it back, than it is to cut it out, thus spaying the woman for no good whatever. Let us suppose a patient has been suffering from dysmenorrhea for two or three years: you make an examination, employ every means of diagnosis, and yet you are not satisfied; then an exploratory incision as a last resort may be justifiable. But when this is made, proceed no further if you do not find disease. No man has more regard for gynecology than I. If the surgeon finds a pus-tube or ovary diseased, let him cut it out. Relief is speedy in such cases. But cyclical and monthly troubles are not relieved by cutting out healthy tubes and ovaries. The right of exploratory incision is sadly abused when healthy tubes and ovaries are sacrificed to the operator's desire to carry away some trophy of the operation. I do not think that good operators (I do not speak of tyros,

men who have had an experience of four or five operations) have yet learned the lesson as to the pathological conditions which require operative procedure. I say this because I have seen the very best operators in this country cut out ovaries which I am satisfied were not diseased. The sacrificing of the ovary alone is bad enough; but this is not all, the woman is subjected to a dangerous procedure, and death is not unfrequently the result.

In regard to antiseptics I do not know whether I was misunderstood. I believe in antiseptics, but I said that the trend of opinion was rather in favor of absolute cleanliness. How do these gentlemen sterilize their instruments? Do they go now to solutions of boracic acid? No. What do they use? They wash them clean with soap and water, put them in a boiler or sterilizer and steam them for half an hour, and then they are considered clean, and they are kept clean by covering them until the operation. What is the history of antiseptics? Do you remember the time when we all glorified carbolic acid? Who uses it now? You remember the time when we used sprays. Who uses sprays now? The time is gone by now when bichloride of mercury is used in every wound. I do not believe that bichloride of mercury ought to be put into fresh wounds unless there is a very good indication for it in the shape of septic matter. I hold that bichloride of mercury has no place whatever in a clean abdominal wound. I do not believe that it should be used on any fresh surface that is not contaminated by septic material. It has been shown that bichloride of mercury produces necrosis of tissue which is inimical to the prompt and speedy healing of fresh wounds. Bichloride of mercury is the king of antiseptics. It can not be denied that it has its field, but this field is not to be found in clean surgical wounds made under the best provisions for asepsis. There are many other agents of the antiseptic kind which have their place and uses, but it can not be disputed that the best class of operators, surgeons, and gynecologists to-day trust to strict and rigid cleanliness rather than to chemical antiseptics, which often give false security, as shown by untoward results.

BACTERIOLOGY: A REPORT.

By Louis Frank, M. D.
Louisville, Ky.

Your committee has found that the literature during the past year relating to his subject is so voluminous that to report only the practical and important facts brought out would make a paper of many pages, and would therefore ask that you pardon what may seem a short or at least a restricted report.

Of greatest importance has been the work done by our colleagues across the seas in regard to that dread scourge, Asiatic cholera, which for a time was knocking at our own doors. The early and certain diagnosis being of the greatest value, and this diagnosis being made with certainty only by our culture methods, I do not deem it amiss to describe the bacillus and its various characteristics.

When, in 1883, Europe was threatened with this terrible disease, the German Government organized an expedition to investigate its cause, and placed at the head of this expedition "the father of modern bacteriology"—he who in 1882 had demonstrated the cause of tuberculosis—Robert Koch. In a short time he was able to report the finding in all cases of the disease, both in the stools of the living and in the intestines of those dead, an organism called, on account of its shape, the comma bacillus. This bacillus he held to be the true cause, the *sine qua non*, and this we know it has proven to be.

This bacterium possesses certain characteristics which enable us to positively differentiate it from all others, and which when found enable us to say with absolute certainty that we have a case of true Asiatic cholera. The bacillus is a short, thick rod about half as long as the tubercle bacillus, but thicker and slightly curved, and in some cultures, especially when old, we find them as long spirals; these latter forms, however, being not true forms, but being caused by imperfect segmentation as a result of degeneration. In fresh cultures they occur singly or in chains of two or three, often in "S" forms; they possess motion produced by a single flagellum attached to one end only, as has been demonstrated by Loeffler.

It is generally believed that they do not produce spores, though Heuppe has claimed the contrary, and there are several things leading us to believe that even if they do not, they at least exist at times in a state more resistant than ordinarily. This resistance, however, is only in certain directions, as we know the slightest amount of mineral acid either destroys or prevents growth—an important point in preventing infection. A temperature of 50° C. as well as drying soon destroys them, and cold is popularly supposed to kill them.

Below 15° C. no growth takes place, nor above 42° C. In the incubator at 37° C. growth is most rapid, though they also flourish at 20° to 22° C. Oxygen is required for their growth, still they multiply and destroy life when introduced in the intestinal tract where there is no oxygen—an interesting fact.

Neither on agar-agar nor on potato do they possess any thing peculiar in their growth, but on nutrient gelatine their appearance is characteristic. If inoculated by stab in a gelatine tube, we find that the growth occurs along our entire line of inoculation, but more rapidly at the sur-

face in the presence of oxygen, where liquefaction of our media rapidly occurs with a peculiar funnel formation, having at its upper portion a large air bubble with the principal mass of bacteria just below the funnel; our inoculation line extends as a clear tube into the gelatine, and organisms are also collected at the lower portion of this culture. This appearance is very striking and possessed by few other organisms. Later in its growth the entire tube of gelatine becomes turbid and liquefied, the bacilli lying at the bottom of the tube, while at the surface we observe a thick scum composed of *bizarre* forms which are numerous and varied, resulting from degeneration of the bacilli. The rapidity of their liquefaction depends upon the temperature, and their rapidity of growth upon the reaction of the gelatine. We may also find, if our gelatine is not sufficiently alkaline, that no growth whatever of these organisms will occur; on gelatine containing only 0.05 per cent soda cultures are negative. This may lead us into error in examining stools of patients, and should always be remembered. On gelatine containing 0.1 per cent the growth is slight, but it increases in rapidity of growth up to its best development, which occurs in 1 per cent soda gelatine. After eight weeks gelatine cultures are completely liquefied, and they at this time lose their transmissibility, though on agar they retain it for as long as nine months even under supposed unfavorable surroundings.

On milk they thrive well, dying off as the milk becomes acid. In water they grow excellently, no matter what the source of the water; this is especially true in filtered water or sterilized water. In unfiltered water they are soon destroyed by the water bacteria. The reaction with pure HCl or H_2SO_4 is not possessed by the cholera bacillus alone, but is not possessed by any other organism resem-

bling it, so that it may serve as a rapid means of diagnosing from other vibriones.

Inoculated into non-sterilized milk fifteen minutes after milking, and maintained at a temperature of 37° C., we find that they increase for from three to six hours; at a temperature of 22° to 25° C., for from ten to fifteen hours, the increase here being very great; at from 8° to 10° C. there was no increase, and colonies were no longer found after two to three days. In all they were alive in from one to one and a half days after inoculating milk. Its life here, however, depends, as I said, upon the acidity of the milk, they dying as soon as the milk is sufficiently acid. These are important points in considering the spread of the disease and the manner of contagion. In milk previously sterilized and kept at 37° C. they lived for two weeks, and at 20° C. for longer than three weeks. Boiling has been shown to be the simplest and easiest way to rid milk of the bacilli, provided during epidemics it is used immediately and not allowed to stand open and liable to reinfection, when they live better than in the unsterilized milk as shown. Milk then may be a prolific source of infection, and its care and preparation become of greatest importance, especially in cities or where milk is obtained from delivering dairymen.

Weyl has shown that even in beer which has not been sterilized they live for twenty-four hours, and may be found, as he demonstrated, by the plate method; after twenty-four hours, though, they die—some satisfaction for the beer-drinkers.

Cultivation on gelatine is the only absolute means of diagnosing the presence of the bacilli and thus of true Asiatic cholera. This is of especial importance, not only in the first cases of an epidemic, but in all cases during an epidemic, as has been shown last year; also in consid-

ering how long persons recovering shall be kept in quarantine. Early in epidemics, or rather during epidemics, many cases of cholera-morbus are undoubtedly mistaken for true cholera, and at this time we are especially apt to have severe cases of cholera-morbus. These mistakes cause inestimable harm and should not be made. Again, we may have mild cases of cholera where symptoms are so slight that they never present the picture of even a cholera-morbus. In these light attacks cramps may not exist as a symptom, and we may have only diarrhea and vomiting, or even the vomiting may be wanting and the diarrhea be the only symptom present, this lasting only a few days, the patient feeling not at all badly; but even in these cases the comma bacillus being present shows them to be cases of Asiatic cholera. Again, in other cases presenting all the characteristics and symptoms of the disease the examination of the stools shows their absence, as the following case illustrates:

A woman of sixty-two, returning on August 24th from a visit to relatives in Hamburg, presents herself at the hospital with a slight diarrhea. At first she felt tolerably well, but on the 29th there set in an uncontrollable diarrhea, violent vomiting, and rapid sinking. In a short time the skin was able to be lifted in folds, which would remain; patient voiceless, severe cramp in the calf of the leg; she became comatose, death resulting on the 31st. The intestinal contents had not the rice-water appearance, but were of fluid consistence, stained with bile, and scattered through with yellow glass-like particles of mucus. The comma bacillus was not found, instead the B. coli communi, with a streptococcus. In this case the fact that she came from Hamburg made the diagnosis almost sure, and disinfection was carried out in the usual way until the examination after death, when the body was allowed

to be taken away, no suspicious cases even arising as a result.

As an example of the other variety of cases, we have the case of Mr. B., musical director, from Hamburg, who arrived in Berlin from the previous place at 6:00 A. M., September 15th. He went at once to the municipal disinfecting station for observation, as he had had, after taking some "cholera drops," some gaseous eructations. From the station he walked to the hospital. Immediately after arrival, between 10:00 and 11:00 A. M., he had a diarrheal stool. Between 16th and 17th then, and between 17th and 18th, also three stools of same character; no vomiting; no cramps. Felt absolutely well during his stay at the hospital. In one of the stools of 17th numerous comma bacilli were found, and a plate of the same, after twenty-four hours' growth, showed also numerous colonies of the organism.

Where quarantines exist persons should be kept there until the organisms are no longer found in the stools, which may be a variable length of time; for so long as the bacilli are present, just so long are these persons capable of spreading the disease. During this time the stools should be disinfected, and as the best disinfectant milk of lime, 1 to 4, has been most efficacious, rendering them sterile within one hour. The method of carrying this out has been to bring in the vessel a quantity of milk of lime equal to the stool; this is shaken well and allowed to stand one hour, when the disinfection is absolutely complete. Utensils capable of standing it should be disinfected by dry heat, other substances by steam, for two hours, taking care not to try to disinfect too much at once. As quarantine measures, neither the forty days' detention nor the shotgun cordon is of any use. The epidemic of last year and also of previous years has shown that on land these

means are absolutely valueless and incapable of preventing the spread, while in those instances where infection is through seaport we may hope for better results. But even here, with the strictest precautions, cases will occur, as was illustrated recently in New York. In considering quarantine measures these facts must be borne in mind, as they show the inefficiency of such methods. Better results in preventing spread are gotten by inspection and observation for a few days of travelers both at points of beginning and ending of journey, with the issuance of certificates, which latter, however, must be reliable. Provision should be made for disinfection of stools of those traveling, as when cases do occur this is a frequent source of spread, on account of the construction of the closets in railway carriages. However, when cases at all open to suspicion do occur, they should be at once isolated, a bacteriological examination made of the stools, and, if proven by this examination to be the disease, should be detained until the bacilli disappear from the feces. The effects should be sterilized with dry or moist heat. In no case should those not having the disease, even when from infected places, be compelled to remain with those having the cholera; they should rather be allowed, after disinfection of luggage, to proceed on their way, being kept under surveillance by the health officer at the point of destination. The spread of cholera would in this way be less than if we rely on making fixed lines through which we endeavor to keep it from passing. The laity should be educated not to fear, as there is absolutely no danger from contagion, and the spread from any given case can be prevented. There would then be no necessity for smuggling in persons from cholera districts; the people would gain confidence in our prevention measure, commerce would not be so demoralized, more and possibly many would not die of fright. The

people should be instructed in hygienic measures, not by the police, but by competent physicians under control of our health bureau.

Inspection of the premises should also not be left to the police, but should be done by a qualified hygienist. A factor which we have not studied thoroughly until lately, a source of infection that all quarantine measures, be what they may, can not control, is the spreading of the disease by flies. Flies allowed to feed on infected material show by the plate method two hours afterward that their excrement contains, besides an inestimable number of saprophytic, also cholera cultures.

After from six to twenty-four hours proportionately less numbers of saprophites are found and relatively more cholera organisms. Numerous control experiments made at the same time showed the absence of the organisms in the excrement from these flies. In the intestinal contents of flies fed on pure cholera cultures, as also in their excrement, the organisms were found after one, two, and three days. The intestinal contents of flies fed, not on a pure culture, but on the intestinal contents of one dying of cholera, showed the presence of Koch's bacillus, and also others found ordinarily in the place from which the infecting material came.

The virulence of the organisms found were not in the least diminished, as shown by injection into guinea-pigs and into pigeons. It is quite probable that the bacillus does not possess the power to multiply itself within the flies.

These facts show us "that flies are to be regarded not only as a spreader of infection, but also as a source from which our foods are constantly contaminated with new and fresh generations of the cholera bacteria."

In the prevention of cholera we may hope for some-

thing in the way of artificial immunity which Haffkine and others were able to produce in the guinea-pigs.

Haffkine, having rendered the animals unsusceptible to intra-peritoneal injections, tried the same experiments on man. He injected himself with a large dose of the same virus (premier vaccin anti-cholerique) with which the pigs had been rendered immune. After the injection there was some ill feeling lasting twenty-four hours. The temperature rose from 36.6° to 37.5° C. There was no digestive disturbance. Some slight local reaction was present, consisting of swelling of the skin and also of the lymphatics on the same side. The pain disappeared after five days, the swelling remaining for four more days. Six days after this inoculation he allowed himself to be injected with a very virulent cholera virus (second vaccin anti-cholerique). The temperature rose to 38.6° C.; no swelling of skin or glands; felt normal after twenty-four hours. Pain at seat of injection remained three days; no digestive disturbance.

A colleague weighing seventeen kilograms more than Haffkine was then injected with the same dose of the weakened virus. Local and general reaction were a great deal less marked, and rapidly disappeared. On the sixth day an injection of the virus exalte was given without any reaction. Other experiments showed about the same result. From these experiments Haffkine expresses the hope that man may be rendered perfectly immune six days after receiving an injection. The vaccine has no dangerous effect on the health.

Other experimenters have been able to produce immunity by injections of virus obtained from the cultures. Also, by injection of the blood serum from a woman recovered from cholera, guinea-pigs have been rendered immune.

The experiments of Pettenkofer and Emmerich have not proven any thing new, unless it be to more fully establish the bacillus as the cause.

Koch, in his earliest publications, stated that not all were susceptible, only possibly two in every five. That both Pettenkofer and Emmerich had cholera I believe all will agree who read the publication. Pettenkofer's case was very mild; Emmerich's was more severe, so much so that he felt called upon to take tannic acid and opium as astringents and cocoa and red wine for stimulation.

Just such cases as they had were seen in Hamburg and other places, one of which I have given.

All diseases vary as to severity, and while we must admire the scientific spirit exhibited, nothing that was at first asserted by Koch has been disproven, nor has, as some anti-bacteriologists claim, any harm been done to our branch, which, though only a few years old, has made more rapid advances and been of more practical service, especially to the surgeon, than any of the allied sciences of medicine.

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DISEASES OF THE MIND AND NERVOUS SYSTEM: A REPORT.

By Curran Pope, M. D.
Louisville, Ky.

Your reporter upon the progress of Diseases of the Mind and Nervous System has found his field one of exceeding interest in the past year. The intense intellectual activity that has marked the progress of medicine generally has not been absent from this important branch. Experimenters, physiologists, pathologists, and clinicians have yielded us a rich harvest, and it behooves us to garner this yield. It is not a lack of material but a superabundance that has hampered my selections. I have endeavored in each division of neurology to sift the grain from the chaff, and present in as concise a way as possible for your delectation and benefit the result of the year's work. In many instances matter of value to the specialist has been cast aside, the writer feeling that the interest of the general practitioner rather than the specialist should be subserved. It is with a feeling of pride that the physician of to-day, looking in retrospect through the past year, feels that medicine is fast approaching a science, and to the credit of neurologists may it be said that each and every day places them nearer to the exactness that should mark a scientific branch. The key-note has been struck, the alarm gone forth, and the profession generally awakened to the fact that in medicine and surgery, as in other branches, precision must be observed. Precision in investigation, pre-

cision in diagnosis, precision in treatment, whether it be medicinal, operative, electrical, mechanical, hydrotherapeutical, vibratory or hygienic; it is precision first, precision last, and precision all the time.

Should the writer infuse in you his own feelings and regard of the necessities of precision, he would feel that his time and work had not been misspent.

The subject of chronic diseases has received more attention, in the opinion of the writer, this year than in any of the last decade.

The day is past when the hopeless sufferer of degenerative diseases of the spinal cord is turned loose upon the roadside to hopelessly die, and in voicing my opinion of these diseases I can simply reiterate the words of Dr. Baruch when he said, "No case of chronic disease is incurable until hydro-therapeutics have been tried." Functional diseases have this year received that merited attention of which they are always the recipients, and such obscure diseases as myxedema and exophthalmic goitre brought within the range of curability. Such work and such results stimulate the arduous workers in this field and animate them to renewed efforts, and I trust that within the limits of this paper I may bring before you facts that will be of assistance to both you and to me. In neurophysiology Helmholtz and Hering are contending for the supremacy of the psychological field for their respective color-vision hypotheses. Wundt and Helmholtz rival one another in the attempt to demonstrate the visual space, while Dr. Ayers contends that the semi-circular canals have no functions at all, though physiologists have been assigning to them the static sense, making them the sense organ of equilibrium and acceleration of bodily movement.

Luciani (reviewed by Sepelli), after eight years of laborious work, gives us the results of his investigations upon

the cerebellum. He says "that the cerebellum is a central organ which is functionally homogeneous, and is not an aggregation of organs to each of which can be assigned a different and distinct function." His experiments upon animals show no material alteration in the senses, instincts, and intelligence, thus harmonizing experimental with clinical observations.

There was no paralysis of the senses, movement, or of sensorial, intellectual, or volitional functions. Briefly stated, the functions are sthenic, tonic, and static neuromuscular power. The balancing or equilibration function seems secondary to cerebellar tonicity.

Bassett calls attention to the various paralyses that occur after acute infectious diseases, and points out the clinical fact that they are not all of the so-called organic type, but believes they are in reality local diffused or multiple neuritis, though he is careful to give the organic cases their full and just dues. A large number are toxemic, due to poisonous organisms, directly or indirectly, but not necessarily giving rise to inflammation of the brain, nerves, or cord.

Treatment in early stages, bicarbonate of potash, mercury, and salycilate of soda; in later stages, tonics, as iron, quinine, cod-liver oil, arsenic, and fresh air, together with massage, electricity, and hot douches.

Bunnuzi, by flexing the legs upon the abdomen, has stretched the spinal column in tabes, increasing the respiration and circulation, relieving the pains, and improving the gait.

During the last year the subject of acromegalia has received marked attention, and the question as to whether the enlargement of the hands, head, and feet is due to the enlargement of the pineal gland has been discussed both *pro* and *con*, and the dizziness, tinnitus, pain, and general

discomfort have likewise been laid at its door. Treatment symptomatic, purely.

Phelps draws an analogy between hereditary chorea and general paresis, adducing cases and *post mortems* to support his statements.

This adult disease, commencing insidiously and increasing slowly but steadily, is characterized by choreic movements, and has a strong and effective tendency toward mental weakness, irritability, dementia, and inevitably toward exhaustion. In nearly all cases the hereditary tendency may be traced. Lisle reports two cases of epilepsy in which barium chloride, C. P., ⅛ to ½ grain doses, was used with good results. He remarks that barium has an action similar to digitalis and ergot, and on this bases his therapeutic use of the drug, while Halle entertains us with the information that he has discovered the bacillus of epilepsy. Kelly has relieved a woman, aged sixty-four, suffering from convulsions by simply compressing the carotid with his thumb. Its simplicity suggests itself to the profession. Casciani has used quinine in severe cases of hystero-epilepsy, with uniform success, in doses of from 12 to 15 grains; and, according to the report, the attacks "are cut short at once and definitely." The bisulphate is preferred. Engel describes a new form of nervous diseases under the title of dementia epileptica, a disease of childhood, in which the patient is healthy until its ninth or fourteenth year, and then is simultaneously affected with epileptic convulsions and mental impairment. The attacks are of unusual severity, duration, and frequency. The patients thus affected are well developed physically (differing in this respect from idiots), while mentally ill-developed. They can talk correctly, but are sulky and vicious. The mind retrogresses, while the passions, vices, and immoral ideas become more and more licentious. They are prone

to maniacal attacks, and under the bromides the fits lessen but the maniacal attacks increase. The cause of the disease is an abnormal formation of the bone structure. The bone loses its outer and inner laminæ, its diploe, and resembles chalky mortar, and in consequence the fontanelles and sutures close prematurely. The cranium is abnormal in shape, its dimensions are narrower, and presents depressions and flattenings where it should be vaulted. The treatment is linear craniotomy, and the author, speaking of its results, says: "Diagnosis having been established, improvement rapid and often miraculous following linear craniotomy may be guaranteed. The operation should be done at the localized seat of the trouble, which will generally be found within an area whose center is the junction of the coronary and sagittal sutures. The line between the trephined openings is sawed. Strict asepsis is a *sine qua non*."

Constantine Paul claims excellent results in the treatment of neurasthenia by injecting an extract of the gray substance of the brain, while Hammond has likewise by a special process obtained an extract for a similar purpose.

Seguin discusses the relation between eye-strain and cerebral hyperemia under the title of "Cephalic Paraesthesiæ." He discredits "cerebral hyperemia" (Hammond), "congestion of the base of the brain," and such "fanciful vaso-motor pathology," and states that he believes "such cases have never been cured by these means alone."

His etiology is, first, eye-strain (the largest credit is given this); second, dyscrasic conditions, as oxaluria, lithemia, and latent gout or conditions of the suboxidation; third, anemia; fourth, origin of organic diseases; and fifth, extra cerebral lesions, as spinal irritations. The symptoms are those commonly associated with neuras-

thenia. Eye-strain may produce, unquestionably, paraesthesiæ and the resulting symptoms, but the condition may remain unrelieved by glasses, as the reviewer has seen on more than one occasion. A common-sense therapy is hygiene, tonics, and correction of ocular defects.

John Ferguson, in an article of unusual merit, calls the attention of the profession to the subject of tendon reflexes, remarking that it is well known that muscle tone is due to a normal and healthy nerve connection with its spinal center; that this is stimulated by the cerebellum and controlled by the cerebrum. Loss of cerebellar influence by disease causes loss of reflexes, and the loss of cerebral control causes increase of reflexes. He shows in an interesting manner that exaggerated reflexes are not always due to descending degenerations. In diphtheria the loss of the knee in the early stage is in his opinion a valuable differential diagnosis point. In a later article he locates the center for the knee-jerk in the fourth lumbar segment. In the following table I have summed up his experience with the knee-jerk:

LOSS.	INCREASE.
Diphtheria.	Spastic paraphlegm.
Supervenosity.	Alaxic.
Total transverse lesion.	Multiple sclerosis.
Cerebellar damage (by tumor).	Concussion.
Coal-gas poisoning (2d stage).	Alcoholism.
Cyanosis (from cough).	Bromism (impending).
Status epilepticus (after fit).	After shock.
Sleep (deep).	Cerebral injury.
	Coal-gas poisoning (1st stage).
	Jacksonian epilepsy.
	Sleep (light).

Church discusses the question of vertigo due to arteriosclerosis. The symptoms are these: A man in the prime of life, without previous serious illness, becomes suddenly

faint, has swimming in the head, giddiness of distinct gyration, darkness, and a feeling of impending death.

He seeks advice of a physician, who upon examination discovers a tortuous frontal artery, an arcus senilis, a strong, clanging second sound of the heart, and a spygmographic tracing of increased arterial tension, with pulse slow, urine scant, and with may be a trace of albumen. There is usually fullness in the head, heat in the scalp, and blurs before the eyes; gout, rheumatism, and lead infection are mentioned. Iodide of potash in thirty-grain doses is of value, while the nervous symptoms are to be treated rationally.

Thomson calls attention to the fact that patients suffering from vaso-motor neuroses are usually found in highly cultured communities, and are not dull and stupid, but keenly intellectual. Patients the subject of epilepsy, hysteria, morbid blushing, and drink-craving may produce in the child faulty nerve-habit, which an exciting cause may turn into disease, be it mental, emotional, fear, fright, or shock. He quotes cases of polyuria, diarrhea, blushing, cardiac palpitation, and enlargement of the thyroid, edema, facial blushing, and tremor. He attributes this to vaso-motor disease, agreeing with Hughlings-Jackson that "all parts of the body are represented in the highest cerebral centers."

Mackenzie has treated myxedema with success. His description of the disease is admirable and worthy of a reproduction had I the space. The treatment consists of feeding with thyroid glands, which in a short time produces a complete change and eventually a cure.

Wallace gives us his personal and professional experience of those nerve-storms to which the name of migraine is given. The symptoms are a dull, heavy aching, desire for the avoidance of mental and physical exertion, coated

tongue, nausea, irritability, constantly increasing pain, light-colored urine, acid vomiting, sleep, and finally relief. He believes it to be due to defective or insufficient excretion of the liver and partly of the kidney. Overwork, exposure to cold, lack of skin action, tobacco, alcohol, malt liquors, saccharine food, poor mastication, etc., are causative factors. To prevent the attack, fresh food, fruit and vegetables, fresh butter, meat and milk, without pickles, pastry, or jams, should be partaken. Be a sparing rather than a repletive eater, with regular hours for mental and physical work. Drink large quantities of water. The bowels should be kept open. To abort an attack the food should be mostly fluid, and alkaline drinks with small doses of iodide of potash should be drunk in the morning. (In my experience this is better than many of the coal-tar derivatives, as it does not cause subsequent depression. A sweat in a sweat-box at 150° for ten minutes, followed by a rain bath at 80°, twenty pounds pressure, for one or two minutes, is even more efficacious. I rarely use antipyrine, but prefer the dietary and water treatment.) During the attack no solid food should be eaten, but alkaline drinks, such as soda-water, vichy, seltzer, or geidshubler, should be drunk freely, and the bowels kept open thoroughly. Between times "flush" the kidneys by copious draughts of plain alkaline or slightly laxative waters.

Ferguson reviews the work of others and adds his own experience upon the "insanity of exhaustion after acute diseases," etc. He states that it usually takes the form of confusion of thought and dementia, but that such names as "typhomania, confusional insanity," etc., are objectionable, because it may be mania, melancholia, or dementia. They may be caused by exhaustion of nerve-centers, specific materies morbi, of germ origin, non-specific poisons (as uremia), hyperemia, and overactive brain centers,

especially the emotional. As to prognosis, I quote the writer: "In cases not the result of organic disease it is among the most amenable to treatment of the many morbid conditions with which we meet. This should be recognized by the general practitioner in its early stages, and if proper treatment were pursued we would have less chronic and incurable victims in our asylums." Home treatment is advisable if possible. Go in to win, and be "ever careful, kind, firm, persevering, and patient in your attentions, and if possible never cause distrust." Sleep should always be secured. Equable temperature and forced feeding are necessities. He closes with words that every practitioner of medicine should remember and follow: "Pray do not substitute the insanity of drugs for the insanity of disease, and I beg of all to use great care not to establish the habit of taking hypnotics among your patients."

Corning announces to the profession a new device for the cure of localized and diffuse internal head pains. A warm solution is used to cleanse the nose, remove the mucus, and dilate the capillaries. Alkaloidal solutions of various drugs are introduced into the nose by means of a spray, and after five or ten minutes the jugulars are compressed by means of a pneumatic compressor. The results read like fairy tales.

The stomach is spared, and the delicate alkaloids enter the circulation unchanged by the chemical products of digestion; relief is prompt, and a habit less likely to form; to which latter the reviewer begs leave to put in a demurrer.

Baher warns us of the danger of repeatedly prescribing sedatives, stimulants, and narcotics, and that nervous processes repeating themselves constitute the basis of a habit; especially dangerous are the hypnotics.

The continual use of chloral, chloroform, alcohol, opium, and many other drugs is exceedingly dangerous. The

three factors in the formation of a drug habit are exhaustion, insomnia, and pain due to impaired or unstable nerve force and improper methods of living.

Drugs for the relief of these symptoms should be prescribed with care and regard for the dangers of habitual use. He concludes by saying: "He is indeed a skillful physician who can treat insomnia without the aid of drugs." At the same time Freidenreich reports two cases of lethal poisoning by sulphonal, while Dr. Boyer sounds a warning note in regard to those commonly used drugs, viz., arsenic, chloral, and sulphonal. His warning, in my opinion, is timely.

Charcot, observing that patients afflicted with paralysis agitans were much benefited by railway journeys, has had constructed a chair by means of which motion similar to the cars can be transmitted.

Gilles de La Tourette, by means of a helmet, has localized vibrations to the head, and by its means has treated insomnia, migraine, neurasthenia, and melancholia with success. It is constructed of concentric mobile laminæ, above which is a small tray, and above this a small motor. The motor makes about six hundred revolutions a minute. The duration of the treatment is from one to eight minutes. It has an exceedingly quieting and toning effect upon the nervous system in general, and especially upon the brain.

Foster, in an editorial, says of electro-therapeutics: "Any one who has employed electricity in the treatment of disease, and who at first had not been dazzled by enthusiasm or blinded by prejudice, will, we think, have arrived at the conclusion that its use rests on a safe basis, and that as much can be alleged for it as for any therapeutic measure we have at command. To say more is to bring it into disrepute; to say less is to show evidence of prejudice." To which the writer thoroughly agrees.

Caldwell, Morton, and many others have advanced this branch during the past year. Especially has this been true of the statical form, and the general recognition of the advantages of the polar method of treatment is an advance very pleasing to the reviewer.

Weir-Mitchell, Peterson, Baruch, and Ransom have urged upon the profession the necessity of hydro-therapeutic measures in intractable affections. Their writings are pleas to the profession to utilize what in their hands has proved a boon to many a sufferer. Baruch thoroughly covers the field when he states, what is now thoroughly well known through the writings of Charcot, Erb, Winternitz, Nothnagel, and himself, that no case of nervous disease should be given up until hydro-therapy has been applied. Ordinary bathing establishments are worse than useless. Precision is needed. The duration, temperature, force of impact of the water, and the kind of therapy needed for each case must be applied under the direction of a competent physician, a careful observer, assisted by trained persons.

Much has been left unsaid and much unwritten of the work done this year. The endeavor to cover so large a field, teeming with the daily writings of our best physicians, has made the task a laborious one, but the thought that the work done and the benefits that might be derived from it have stimulated me to work the harder. I trust that the physicians assembled here will overlook any discrepancies that may have occurred, and believe that such comments as have been made by the reviewer were dictated by a conscientious feeling and a firm belief.

In conclusion permit me to say that I trust each and every year will be fully as progressive as this, and that you and I and all of us may reap with the coming years the golden harvest of man's noblest work.

I would like to present to the Society Dr. Tourette's vibrating helmet. As far as I can possibly learn, this is the first helmet ever imported to America. It consists of a metal cap or helmet on the outside; at the apex on the interior is a pad that rests upon the vertex of the cranium. Around it are mobile springs that retain the helmet closely to the head. Upon the top is a small wooden block upon which is a motor. The motor is run by means of a storage battery, and averages from 2,000 to 4,000 vibrations a minute. The motion thus transmitted resembles very much nerve percussion or mechanical massage, and, if we believe the statement of the discoverer, nearly every form of head trouble would be relieved by it.

I beg leave to present these two douches for the consideration of the Society, as their application has an extensive use in all affections of the nervous system. They are the alternating spray, the fan, and the jet. The application is usually to the nape of the neck and the spinal column. Hot and cold water are used under various pressures, and the therapeutic effects obtained are many. By means of the levers the direct force of the stream is broken and the water spread out in a fan or spray shape. In all conditions, except in chronic spinal-cord diseases, their use is extensive. They are especially applicable in neurasthenia. In their use one has to be guarded as regards temperature, pressure, duration, the distance of the patient from the nozzle, and the changes in temperature from hot to cold. By the lever arrangement these douches can be converted into what is known as the alternating Scotch and the broken column of Charcot. They are simple in construction, and are merely shown as one of the advancements lately made in hydro-therapeutics. I commend them to your attention as one of the many modern methods of obtaining results in diseases that have resisted the ordinary means of medication.

DISCUSSION.

DR. F. H. CLARK, of Lexington: I wish to add my testimony to what has been said of the abuse of hypnotics. To get along without them is one of the most difficult things for neurologists and alienists. A large measure of the success of the treatment in asylums and public institutions is due to the fact that in these places the physicians use very much less of hypnotics than is necessary in outside practice.

In regard to vibratory apparatus, I know of it only through the medium of journals and to-day's exhibit, but I want to suggest a partial means to meet the same end in the hands of the general practitioner. I believe that by the galvanic current properly interrupted, or the faradic current properly mitigated, we ought to secure results equal to those obtained by the vibrator. The value of electricity in inducing sleep and in relieving pain is too well known to call for comment. We may also effect a kind of mechanical massage by general faradization.

DR. POPE: Dr. Clark's mention of electricity as a substitute in the hands of the general practitioner for the helmet calls for a word. I think the vibration of the faradic current too strong in treating nervous patients; but if we wish a very strong effect from the electric current, we should use the polar method, in which one of the poles is placed upon a neutral point and the other applied to the cranium. Very good results may be obtained in this way which can not be had from the same current otherwise administered.

As to the treatment of insomnia by hypnotics, my experience has been that of Dr. Clark. I have found heretofore but three things that are useful in the treatment of insomnia: hydro-therapy, electricity, and massage, in the order named.

CHOLERA INFANTUM: A REPORT.

By Lyman Beecher Todd, M. D.
Lexington, Ky.

In asking your consideration of the subject of cholera infantum, that great bane of infantile existence, I purpose briefly to present a summary of the prominent current literature and practice of the profession concerning it. Time and the proprieties of this occasion forbid minute description of the anatomical structures involved, and the physiological functions thereof. Nor does the province of this paper justify the recital, however pleasant the task would be, of the learned and elaborate theories of the text-books; but rather would I mention certain characteristic pathological changes and conditions, and gather experiences that the past year has furnished, as ripened fruit and garnered grain, the results of the scientific thinkers, the every-day thoughtful workers, the intelligent and studious physicians, whose bedside observations are very valuable to us.

The importance of this subject is appreciated when we remember that cholera infantum takes fifth rank in the mortality of generally prevailing diseases, as shown by carefully prepared statistics of seven State Boards of Health, where sanitary principles are most regarded, and in this order: consumption, typhoid fever, diphtheria, dysentery, cholera infantum.

Let it be borne in mind that the starting point of this much dreaded and fatal disease is usually an acute dyspeptic diarrhea, a catarrhal inflammation of mucous membrane

of the stomach, extending into the intestines. Primarily the trouble is functional, and secondarily it is the result of a true inflammatory enteritis. It is a disease of the hot months, and usually occurs in children under two years of age. The name, cholera infantum, designates the violence of the symptoms, which closely resemble those of Asiatic cholera, and when the latter terrible malady is prevalent the differential diagnosis is difficult if not impossible.

The common causes of cholera infantum are impure air, the result of animal and vegetable decomposition, overcrowding, personal, and domiciliary uncleanliness, and, it has been asserted, from putrefactive changes going on in the intestines from poisons formed within the body, and perhaps in the great majority of cases by improper food. Hand-fed infants who are deprived of wholesome breast-milk suffer most, owing to the decomposition and contamination of milk. Among these the mortality is very great, eighty or ninety per cent. The symptoms presented are the sudden and abrupt commencement of the attack. The parents say that "the child only a few hours before was apparently well." Evacuations are very frequent, watery, and serous, that soak into the napkin like urine, and are often colorless, with an odor which is musty and offensive. It is said that these alvine discharges, to which rapid prostration is so largely due, consist in part of intestinal secretions and serum which has transuded from capillaries of intestines. The pulse is rapid and feeble. The irritability of the stomach is constant and persistent, throwing up every thing that is swallowed, which greatly increases the prostration and danger. Thirst is intense; indeed, insatiable. Appetite lost; temperature 105° to 107°; restlessness. The urine is scanty, uremia causing cerebral disorder. The loss of strength with emaciation is rapid, far more so than in any other diarrheal malady except Asiatic cholera. Eyes

are sunken, the eyelids and lips generally open, and most dreadful of all is collapse.

What a picture is this of innocent helplessness; of danger, if not also of hopelessness!

But the question most pertinent and most important is, what shall we do? And if eternal vigilance is the price of liberty, and if it is rewarded here, it will be the price of a precious life.

The diagnosis of cholera infantum depends upon the presence of uncontrollable vomiting and diarrhea, intense thirst, rapid shrinking of the body, copious serous discharges, and collapse; suddenness, and often violence of attack.

The prognosis in well-marked cases is extremely grave. In excessively hot weather, when collapse is established, death almost invariably ensues.

The morbid anatomy is not considered very characteristic. There is evidence of catarrhal enteritis, with denudation of epithelium and enlargement of solitary glands. Follicular ulceration is frequent, as also is nephritis. There is a profound affection of the nervous system. It has been said, and I believe said truly and wisely, that to establish the integrity and control of the nervous supply governing the digestive tract is to cure the disease. A learned practitioner has declared that cholera infantum is as undoubtedly of bacterial origin as is Asiatic cholera.

Cholera infantum is considered due to a poison of the toxalbumin type, and has been pointed out by Professor Vaughan, and very properly called by him tyrotoxicon. This ptomaine is found in the milk under certain conditions and circumstances which if properly studied will give a satisfactory explanation both of the time of attack and the mode of invasion. It may also suggest the proper therapeutical treatment.

It is indeed comforting to know that an eminent physician of extensive practice in a city having the fourth largest population in the United States has said, taking all the cases of summer complaint that he has seen during the past ten years, not one case in twenty has been true cholera infantum.

For encouragement concerning cholera infantum, let us "not despise the day of small things." You have seen the pebble in the brook turn aside the current of the stream that moves the mill miles away. Upon a sultry afternoon in August, 1864, I visited a little child, exhausted apparently to extremity by continuous vomiting and purging, with a restlessness almost beyond endurance, which could be quieted only by the motion of the little carriage in which I found her lying. The father's first remark, "Doctor, she throws up every thing that she swallows, and purges all the time," gave the key to the pitiable and perilous situation. Best French brandy was quickly brought, of which twenty drops in crushed ice were given with regularity every half hour. The stomach and bowels were kept well covered with warm spice poultices. After four hours, during which the little patient had slept considerably, which for ten hours previously she had not done, I gave one grain of calomel dry on tongue. This was repeated hourly until five grains had been taken. She was thereafter closely watched, carefully nursed, and judiciously nourished. She is to-day the happy mother of a happy family now residing on Broadway in our city. During the night in midsummer, a few years since, I was hurried to see a little child that was "very ill." She was brought to me, carried upon a pillow in the tireless arms of her mother. Under the subdued light of the chandelier she indeed seemed lifeless. "I have been walking and rocking her for hours," said her mother, "and can not quiet her;

her stomach and bowels are, I am afraid, beyond control." A few drops of iced champagne were regularly given every twenty minutes, and warm spice poultices were kept over the entire front of the body. I remained all night. At daylight all was quiet on the canal alimentary. One grain of calomel was given every hour for four hours. No other medicine, but nourishment judiciously was given. I can never forget her appearance as she lay upon that pillow that night. I frequently meet her on the street as she returns from school—one of the prettiest girls in Lexington.

Speaking negatively of cholera infantum, it is not confined alone to overcrowded localities in cities, but has prevailed with alarming fatality in country towns and suburban homes. It is not so much relieved by medical treatment, treatment by drugs, as by preventive and hygienic measures. It is not generally benefited by opium and vegetable astringents *per orem*. They lock up the poison within the system; they obstruct the secretions, and hasten the fatal end.

It is not due to a certain or a single cause, nor always to the same combination of causes. It is not identical with summer complaint. Certain intelligent and reputable practitioners rely, in the earliest stages of cholera infantum, upon very large doses of calomel to arrest or abort the poison and violence of this disease, giving at one time twenty grains and repeating it. This I never did. But as soon as the stomach can tolerate it I have administered small doses of calomel, one grain given hourly until five grains have been taken, with satisfactory benefit. In that manner given, or even five grains given at one time and repeated, I regard calomel the sheet anchor in cholera infantum, together with supporting treatment and appliances for the comfort of the little patient, to which I shall hereafter refer.

My friend Dr. Larrabee, whom you recognize as excellent authority, called the attention of the profession some years since to the beneficial effects of hypodermic medication in the treatment of cholera infantum, giving injections of one fiftieth of a grain of morphine and one one-hundred-and-fiftieth of a grain of atropine to control the nervous disorder. This is to be followed by small doses of calomel, lime-water containing a little carbolic acid, allowing toast-water only for nourishment for thirty-six hours. I remember how enthusiastically he asserted that by this treatment death from cholera infantum would be the exception. He believes that the most important element in the treatment is prophylaxis to secure immunity from the disease. He says that the formation of poisonous alkalies in the milk used by infants who are deprived of mother's milk causes the trouble, which can be prevented by sterilizing the milk at 212° F. Then such poisons can not be developed. If there be restlessness, enemata of boiled starch to the consistency of syrup, containing a few grains of chloral and bromide of potassium, is indicated. Pepsin acts as a sedative to the stomach and aids digestion, and vomiting is often controlled by pepsin and bismuth and spice poultice. Arsenic and arsenite of copper are recommended on high authority, and I believe during the past year they have been largely used, though Dr. Woodbury says that "the occasion rarely arises, in my opinion, where it is prudent or safe to use them." Close study and observation should be given to all peripheral sources of irritation, dentition, phymosis, etc.

I know that you regard, as I do, hygienic measures essential in the treatment of cholera infantum. Intestinal antisepsis is here a very important factor, which practically means the keeping of the stomach and the bowels pure and free from all abnormal, fermentive, or putrefactive

changes, for which salol is highly recommended in small doses, or salicylic acid with the addition of sodium bicarbonate, and bismuth, if desired.

Food, good and nutritious food, properly prepared and given at regular intervals is of highest importance. I have derived great benefit in severe cases of cholera infantum from the use of Fairchild Bros. & Foster's (New York) peptogenic milk powder, which yields the best physiological substitute for mother's milk, especially where great exhaustion and intolerance for food exist. It seems particularly acceptable to the stomach, and certainly is easy of proper assimilation, and thereby subserves the needs both of general nutrition and of the nervous system.

For an excellent tonic for suppurative treatment I have used with happy and most satisfactory results a few drops, regularly and frequently, of Fellows' syrup of hypophosphites. It is certainly valuable and reliable on account of its ready assimilation into the blood, its action in restoring tone to the nervous system, its assistance in the assimilation of food, and the aid it affords in the manufacture of the blood cells. Extremes of temperature should be avoided. Perfect cleanliness of person, tepid or sponge bath as heat and other conditions of the skin require, cleanliness of clothing and of the bedding, abundance of pure air inside and outside of apartments, plenty of pure water, clothing suitable. No portion of the body should be clothed so warmly that perspiration should be easily increased, since a rapid loss of heat is caused by evaporation. To prevent rapid loss of heat, underclothing of wool should always be worn. Wool is the best material that can be used to prevent rapid evaporation, and at the same time to allow the air to ventilate the skin. All parts of the body should be kept equally warm. Disinfectants should be used.

Chilliness and coldness of the surface of the body in cholera infantum is greatly to be dreaded, and all possible means should be employed to prevent and overcome it. A most admirable and satisfactory contrivance for securing and for preserving heat and comfort I saw used at an institution for foundling infants which I recently visited. It is known as the water-bed, and is worthy of your attention as an excellent appliance for heating the body in the cold stage of collapse. It is an India-rubber water-bed of any size desired for the sick. It is placed upon the bed alongside the patient, and is partially filled with water at a temperature of 140° or 150° F., and covered with blankets, upon which the patient is laid. The weight of the body carries it down and forces the water up at the sides, so that the person is partially surrounded by the heated water. The mass of the water and the protection of the blankets prevent the loss of heat, so that the mattress keeps hot for many hours. Patients even in collapse or with subnormal temperature and profuse sweating have been relieved by the hot water-bed. All that would be necessary to maintain continuously equal and desired heat, temperature rather, would be to have the water-bed supplied with two nozzles and a rubber tubing fastened to each nozzle, one connecting with the spigot and the other outlet with the neighboring bath-tub or with a stationary washstand. This could easily be obtained, if not from a druggist, by telegram from cities in a few hours. I earnestly recommend its use. It has also been esteemed especially useful in the treatment of adults with fever.

Do I read rightly your expressions, my friends, that I weary you thus with details? Let me but remind you that to be victorious the battle with this enemy, cholera infantum, must be fought in detail. You remember that the great Napoleon attributed his most brilliant achievements

to his attention to the details of the campaign. See to them yourselves. Never be in haste to leave a patient in this condition. Stand guard yourselves on the deck, because the little bark is frail and the storm rages high. Your little suffering patient is in great peril, and will appeal to you eloquently, though mute and voiceless: Stay by me until morning. Did I not thus insist upon your watchful and cheerful attention to details in the treatment of this disease, I would fail of justice to you, my friends, in the discharge of the trust reposed in me and the duty assigned me by this Society on this occasion.

In presenting this subject of cholera infantum, so important to us all and to our respective communities, a disease of the hot season, at this time, I take Old Time by his forelock; and when that heated term shall come to us, when by reason of the burden of the heat the lad in the field cried out, "My head! my head!" whom the men carried to the house to die in the arms of his Shunamite mother—then when you shall be called to treat cholera infantum, this disease which has taxed to the utmost the knowledge, the skill, and ingenuity of even those who are best prepared, if at that time should any thing said or even suggested in this paper benefit you, I shall feel more than compensated for its preparation.

DISCUSSION.

DR. R. B. GILBERT, of Louisville: The author says that this disease stands fifth in the rank of mortality in the diseases of the land; but, strictly speaking, that is not correct. It may be true as far as the tables of our mortuary reports are concerned, but cholera infantum is a cholera and not a diarrhea; and I take it that it is not an inflammatory disease, but rather a disease of hyperemia of the mucous membrane of the alimentary tract, and that the very moment that it passes into an

inflammatory condition it is no longer a cholera or choleric disease, but an inflammatory diarrhea, and the line ought to be strictly drawn there. The text-books on the subject do not make the distinction clear enough, neither do the profession as a rule. The summer of 1888 was very hot and dry, and there was a great deal of mortality from cholera infantum in Louisville, so reported. I examined the mortuary list and observed that out of thirty-eight cases of alleged cholera infantum there were only seven in which the duration of the illness was less than ten days. All those cases that lived beyond three or four days certainly became inflammatory diarrhea; some of the cases set down as being deaths from cholera infantum were tabulated as continuing for two weeks, and one even as long as three weeks. Now we all know that a disease of a choleric character, characterized by copious, frequent serous evacuations, the serum being drawn directly from the blood through the follicles into the alimentary tract, can not continue over thirty-six hours at the best. It is cholera infantum in the strict sense only during the time that the serous evacuations continue. Therefore the line should be drawn between inflammatory diarrhea and cholera infantum. If that were strictly done, cholera infantum would fall very low in the rank as a cause of mortality.

A word about the causes: There are several causes in operation that precipitate this disease. The debilitating influence of the hot season of the year is an important factor. It occurs mostly in the latter part of the summer season; noxious vapors from wharves and sewers are also a potent cause of cholera infantum; and indigestible food, which includes all the varieties of milk, etc., that are fed to infants. I know of one case in which a pickle caused a cholera infantum in two or three hours, which terminated fatally in from six to eight hours. Another cause that is not often spoken of (and one that we should look well to) is colostrum in the mother's milk. I have followed up several cases which seem to me to be clearly due to this cause. To illustrate with a case:

There was a lady visiting Louisville from Nashville; she had been there a month or more, and was in perfect health. She had an infant eight months old. Her husband came out

to visit her the day following her arrival, when the child was attacked with cholera infantum in the early part of the day, a severe type at that, which terminated fatally in less than twenty-four hours. The question arose as to what could have caused this cholera infantum. It had had no food whatever except mother's milk, and therefore we had to trace the cause to the milk. On questioning the lady she acknowledged that during the night and morning she had received the sexual embraces of her husband three times, and immediately succeeding each sexual act the infant had been allowed to take the breast. Sexual excitement, if at all excessive, will produce more or less colostrum in the milk. A sample of this woman's milk, which I procured that same morning, was examined microscopically by Prof. H. A. Cottell, of the University of Louisville, and was found to contain an abundance of colostrum. Now I need not say that colostrum is indigestible. It is in the mother's milk at the birth of the child and stimulates the alimentary canal, causing two or three evacuations at the start of life. Two other cases shortly succeeding the one reported were studied up and found to be due to all appearances to the same cause.

In the matter of treatment I can not agree with the essayist, because the pathology of the disease is now pretty well admitted to be neurotic rather than inflammatory; the nerves controlling the mucous membrane of the alimentary canal for the time being lose tone and thus allow this exudate of serum.

DR. F. J. YAGER, of Campbellsburg: I think the paper is strictly abreast of the times. I have had, I suppose, five hundred cases of cholera infantum in my long life of practice. I believe that often too much is done in the treatment of this disease. I am satisfied that the employment of small doses of calomel have done more in my hands to relieve the symptoms in this disease than any other remedy. It is the sheet anchor in cholera infantum, and I make the assertion from my experience. If you allow too much accumulation you will kill your patient instead of saving him. Use calomel judiciously; it has an antiseptic influence; it stimulates all the secretory organs of the system; it revives the liver; it braces the system strongly,

and favors the natural performance of all the functions that protract and continue life.

DR. WM. BAILEY, of Louisville: I would call attention to the necessity, first, of the character of feeding in children, and ask that if possible all sources of irritation in the alimentary canal should be excluded. I think few of the cases reported are genuine cholera infantum. If any thing is to be done for the treatment of cholera infantum it has to be done within a very few hours, for beyond then it ceases to be cholera infantum, and is simply the so-called summer diarrhea. I want to mention distinctly that I disapprove of the so-called small doses of calomel, five grains for the infant. I believe if calomel is used in these cases, it ought to be in one tenth- or twentieth-grain doses every few hours until one grain is used. I think this is the proper method.

I want to call attention and bear testimony to the successful treatment of such cases by means of hypodermic injections, and I would treat these cases as I do cholera morbus, or as we control many of the symptoms in true Asiatic cholera. In these cases there is no absorption from the alimentary canal, and very little medication in that line accomplishes any purpose. Every thing is from the blood-vessels outward and not inward, consequently going to the other side of the circulation. Therefore medicine thrown into the areolar tissue is the proper treatment A hypodermic use of atropine is also of great value. Infantile life bears atropine wonderfully well. In children only a few months old I have been able to give almost adult doses of atropine combined with relatively very small doses of morphia. I have given to a child $\frac{1}{80}$ of a grain of morphine and $\frac{1}{150}$ of a grain of atropine, repeated two or three or four times in twenty-four hours, making the adult dose of atropine, which is admirably well borne by children. This controls the phenomena of cholera infantum, which would terminate life perhaps in a few hours without such treatment.

In addition to minute doses of calomel the indications are for astringents, to arrest the flow of serum; just as a surgeon should ligate a vessel to prevent the flow of blood, so these vessels must be astringed or the patient will die. I must em-

phasize the treatment of cholera infantum experimented with in the polyclinic in New York in 1885 and 1886 by Dr. Perry Watson. I was with him during that time. Some of the cases did remarkably well, but those which reached collapse did not do well; but when we used by mouth $\frac{1}{40}$ of a grain of morphine and $\frac{1}{400}$ of atropine it proved quite successful given with astringents.

INFECTIOUS DISEASES AND THEIR PREVENTION: A REPORT.

By A. D. Price, M. D.
Harrodsburg, Ky.

A few fleeting months since the wise men of this great Commonwealth assembled in this historic city to make a new constitution for its citizens. In its multitudinous work it doubtless did many things wisely and well, and left undone some things that would have been a blessing to all generations to come.

We do not know how many children are born to the Commonwealth, neither can we ascertain with any degree of accuracy how many of its citizens die. We know that people sicken, but can not tell with what diseases, save in our respective localities. If an epidemic prevails in one section of the State it is unknown to another except through the communications to medical journals or in the discussions before medical societies. When the humanitarian seeks to know the diseases that prevail among us, robbing us of relatives, friends, and associates, and learn something of their nature and causes and means for their prevention, he finds his efforts of no avail, because there is no law requiring the reports of births and deaths and infectious diseases.

How many of our citizens die from lack of wholesome food, from bad hygienic surroundings, from infections that could have been avoided, we have no means of knowing. The number is great, and if it could be ascertained would

be appalling. To prevent this unnecessary waste of human life, to save these unfortunate people that they may continue a comfort and blessing to their families, friends, and neighbors, and a usefulness to the Commonwealth, is the great mission of the medical profession. To this end we must labor unceasingly, and for this cause I will ask your attention to the brief consideration of infectious diseases and the means of their prevention rather than waste your time in reviewing the epidemics that have prevailed in the State during the past year, when no one is aware that there has been any outside his own locality.

All people are not alike susceptible to infectious diseases. Some suffer slightly, some severely, while others may be repeatedly exposed without effect. It is then reasonable to suppose that there is a " direct relationship between food and drink and the existence of individual immunity." This fact being admitted, it devolves upon us as medical men to teach the people what and how to eat and drink, and how to live so as to resist disease and approach with peace and comfort the eventide of life.

As to the cause of these diseases there can be no doubt. "The contagium in any infectious disease is the particular pathogenic micro-organism itself, whose advent in the body ushers in the reaction of the body cells which we call disease." Knowing this, we are prepared to institute measures that will modify or stamp out epidemics. Upon this line our best work is done: We would rather prevent than cure; rather banish disease than have the pleasure and the gratification of restoring the sick to health.

Every case of measles, scarlet fever, diphtheria, and smallpox should be isolated in suitable rooms, and the proper precaution taken by physician and nurse to prevent others becoming infected during the duration of the dis-

ease, or after convalescence, by the room and its contents not having been properly disinfected.

Measles is frequently followed by consumption; this and other complications should prevent it being considered a trite and trivial matter, as is often the case, especially by the laity; and no opportunity should be neglected to impress upon the people the fact that safety lies in the observance of the advice and admonitions of the physician.

A frequent and dreaded complication of scarlet fever is nephritis, and every patient, as a preventive measure, should be kept in bed and put on a strict milk diet.

Vaccination is a sure prevention of smallpox, and yet large numbers in every community are unprotected. As conservators of the public health we should see and know that every child, woman, and man is rendered immune to this fearful and loathsome disease. So, when you return to your respective homes, see that no charge of neglect or indifference can be brought against the noblest of professions.

Of all these diseases, diphtheria is the most treacherous, fatal, and difficult to eradicate. "The poison is so elusive and its modes of transmission so numerous as to render it a most contagious disease." Its early recognition is most important. The golden moment, the opportune time, is attacking the bacilli with an effective germicide, such as the peroxide of hydrogen, before the patient becomes poisoned. This should be done at once and in all cases, no time being lost in distinguishing the false from the true disease. Blood-serum injections of weakened cultures render the animal immune, but its protection of man has yet to be demonstrated.

Typhoid fever is always in our midst waiting for its victim. A case of smallpox or cholera creates alarm and rouses the community to measures of self-protection, but typhoid fever breeds a familiarity that begets indifference,

and it is difficult to enforce a systematic sanitation that would suppress it or stamp it out. It is our duty to learn the source of infection and obliterate it, and institute such measures as will render the patient non-infecting. Investigate the drinking water, and if found infected with the typhoid bacillus, order it boiled before being used for any purpose. Ice is often the infecting source and should always claim attention. The discharges from the patient should be immediately disinfected and so disposed of as not to be a menace to the health of others. The patient should be kept clean, and his soiled clothing and sheets should be soaked in carbolized water and thoroughly boiled, and at the same time the entire premises should be put in the best sanitary condition. People eat and drink typhoid fever as they do cholera, and it would become unknown were the intestinal tract kept free of the poison, as it can be by cleanliness and the use of pure water.

When we visit the medical centers and enter the venereal ward, it seems as if the whole world were syphilitic. But syphilis is not confined to the cities; it is everywhere, and is no respecter of persons. The rich and the poor, the refined and the degraded, the old and the young, the innocent and the guilty are numbered among its victims. Its ravages are painfully familiar and should inspire us with efforts to stay its onward course. The poison is a fixed, definite virus, and this being so, the only source of danger is the diseased individual. Could "all syphilitics be isolated till the infectious period had passed, the disease would be banished from the world." As teachers of the people concerning matters pertaining to health, we should ever impress upon the syphilitic the nature and the dangers of his disease, and urge him not to be the means of spreading it. Much could be said concerning the male prostitute and his crime of knowingly communicating a contagious and

dangerous disease, and the measures that ought to be taken to suppress him. Waiving this, it may be asked, what can be done for the female offender? Ordinances can not reform her; give her an honest occupation and the chances are that she will soon forsake it; the ways of sin are more inviting than the paths of virtue and honor, and she is lured back to former vices, knowing that an early and degraded death awaits her. Much can be done for her and through her for mankind. The licensed brothel has much in its favor, as shown by statistics; but its tendency is to drive its inmates into the highways and byways, into tenements, boarding-houses, and families, and thus through hidden prostitution increase the dangers many fold. Early detection and isolation are necessary measures for suppressing the source of infection. Regular, thorough, and systematic inspection would be a step in this direction, and its universal adoption would greatly lessen the disease.

Something, perhaps, should be said of gonorrhea while on the subject venereal. It has been said that gonorrhea kills more people than syphilis, and the dictum is believed, the belief being doubly assured since the gynecologist tells us that it is true, and affirms the statement with the declaration that this disease and bad obstetrics create a want he is destined to fill. Its treatment then should be prompt and effective, especially in the female, that adjacent organs may be protected.

Tuberculosis, the great scourge that finds numerous victims everywhere, is due to a particular germ that is found in the sputum, which, becoming dried, is wafted here and there bearing the bacillus till it finds a congenial soil upon which it grows and develops, producing disease and death. Thus is tuberculosis conveyed from one to another; thus, sometimes an entire family, one after another, contract the disease. The tuberculous patient should be taught to

expectorate in cuspidors, so that the sputa can be destroyed by germicides or by fire. Tuberculous meat and milk of tuberculous cows are sources of infection, and for this cause alone there should be a law compelling the inspection by competent authority of the food supply everywhere.

Children are particularly susceptible to the effects of tuberculous milk, and many cases of so-called summer complaint are the result of infection from this source. This danger should be eliminated by boiling the milk. The tuberculous patient should sleep alone, and every thing used by him, including clothes and bedding, should be properly disinfected, and the room also before being used by another. Thus our duties as sanitarians grow and multiply, and our means of doing good are without number.

Last year cholera for the sixth time entered upon a general excursion from its home in India, and in its onward march reached our shores; but, thanks to "the wise men of the East," its progress was stayed and the nation rejoiced. The approaching season is viewed with much apprehension by the people in general, and particularly by the sight-seeing and the pleasure-seeking multitudes that are gathering in the great city on the lake. The time is opportune to speak to the people, telling them to obey the instructions of the health officers, to eat wholesomely and sleep soundly, to be of good cheer, remembering that the medical profession stands a strong and mighty bulwark between them and danger. It behooves us to teach them that there is no safety in flight, that panics are demoralizing and consequently dangerous, that there is immunity in cleanliness and proper living, and that their homes and themselves can by sanitation be made cholera proof.

Our first duty is to keep the disease out of the country. Can this adequate protection be given the people? The great epidemic of yellow fever of 1878–9, that cost us fifty

thousand lives and much money, answers the question, and teaches us that the severest prevalence of infection can be subdued. This protection should not be sought through local and inadequate measures, but should be secured by national quarantine, divorced from political expediency, and administered by a medical officer aided and advised by a national board of health. These health officers should be men of special training and experience, receiving their appointment on merit and not subject to removal. Such a bureau would soon give us a system of quarantine that would fully protect and not interrupt commerce. The health and prosperity of every citizen are involved in such a measure. When cholera invades a locality the stamping-out process should begin at once. Each case should be reported to the health officer as soon as possible, so that immediate efforts to eradicate the poison can be made. There is no danger as long as the intestinal canal is free of the comma bacillus. To accomplish this, every effort should be made to kill the germ or prevent its development by the immediate disinfection of the ejections and dejections, by immersing in boiling water the soiled linen, by using only boiled water and boiled milk, by eating only wholesome food freshly cooked, and by putting the premises in good sanitary condition. The nurses should wear long aprons to protect their clothing, and keep their hands and faces clean by frequent washing with soap and water, followed by a strong bichloride solution. To what extent the human race will be rendered immune by inoculation with modified cultures of the cholera vibrio remains to be demonstrated. We hope for great things, and patiently wait.

In this closing paragraph what shall I say about puerperal septicemia? It should be banished from the world, and its prevalence in any locality at any time be rendered

an impossibility. It is true that now and then, in spite of the most rigid asepsis, slight evidences of septic infection will be manifested, but the poison should never be sufficient to jeopardize the life of the lying-in woman. We sometimes hear men inveigh against the routine of those who seek through antisepsis to render the patient aseptic, claiming for their own method equal if not better results. Such claims appear absurd to those who frequently see in consultation cases of puerperal septicemia. By thorough cleanliness, persistently maintained, of patient and surroundings, of physician and nurse, puerperal diseases and ophthalmia of the new-born would be reduced to the minimum.

RECENT ADVANCES IN OPHTHALMOLOGY: A REPORT.

By John Y. Oldham, M. D.
Lexington, Ky.

This branch of medicine, as you are all aware, was about the first specialty to attract the physician's attention and demonstrate to him what might be accomplished by the separation of medicine into special departments. Although there have been rapid advances in the various other departments of medicine, this particular one has always kept abreast in the development of that science which has for its goal the health and welfare of the human race.

The advance in ophthalmology should be particularly interesting to the physicians in each branch, inasmuch as it pertains to an organ upon the healthy condition of which depends our ability to keep abreast of the times. The eyesight is an all-important essential to each of us, therefore it necessarily follows that we should have at least a limited knowledge in regard to the preservation of it.

It is true that the ophthalmologist knows a great deal about this little organ and the various pathological conditions to which it is liable, yet there is a great deal to be learned. In some cases of blindness we prove a blessing to humanity, and in many others we are of little use. Headaches, neuralgias, and many other reflex disturbances are frequently relieved or alleviated by the correction of some

error of refraction, yet we meet other disturbances over which we have little control. It is no unfrequent thing to meet an apparent eye trouble which proves on close examination to be but the reflection of some other organ diseased. In regard to headache due to eye troubles, Dr. Casey A. Wood (in the Chicago Medical Record) divides it into seven classes according to the frequency of the disturbance: "(1) supraorbital, (2) deep orbital, (3) intracranial, (4) temporal, (5) supranasal, (6) the vertical, (7) occipital. As exciting causes, aside from acute and chronic diseases, he attibutes to the tasks of convergents and accommodations, also, that in numerous instances the pain does not occur until the following day."

In the treatment of that unfortunate disease, granular ophthalmia, we have as yet no one remedy, either mechanical or medicinal, that is is universally accepted by the profession as *the* remedy for this disease; the opinions and treatment are various and variable. We do agree as to the constitutional requirements, and if we accept the majority of the text-books on this subject, nitrate of silver in from a one-per-cent solution to the mitigated stick sulph. copper, a knife, and a pair of scissors would constitute the local treatment. In many cases the above remedies suffice, but unfortunately we meet with cases in which they prove ineffectual. In the treatment of this affection, Darier, chief of Abadie's clinic, gives, as followed in that service, "first a general anesthetic; he then completely averts the lids by special forceps, the granulations are thoroughly scarified with a grattage knife, to be followed by a scraper and stiff brush until all the morbid tissue is destroyed and brushed away; this to be followed by thorough cleansing with cotton wool moistened in 1–500 solution of corrosive sublimate and frequent bathing with 1–2,000 solution of corrosive sublimate and ice compress."

Dr. Edward Jackson (Medical and Surgical Reporter, August, 1892), as a mechanical treatment of trachoma, prefers Knapp's corrugated roller forceps, as its use is not followed by contraction, and in the majority of cases it does not require a subsequent operation. "He claims that while incision of the granules and sago-like masses and excision of the retrotarsal fold abridges the course of the disease, it leaves a contracted conjunctival sac. Also grattage of the entire surface, followed by the stiff brush, will cut short the disease, but leaves too much contraction behind." Chevallerau, as a treatment of the same affections, "uses cocaine, everts and holds the lids apart with his left hand, then by attaching a compress soaked in 1–500 sublimate solution to right index finger he makes firm and vigorous friction over the entire conjunctiva of the lids and canthi. The results he reports as good. Of the different mechanical treatments I agree with Dr. Jackson in the preference of Knapp's improved roller forceps."

A new operation for congenital ptosis, by Dr. Gillet de Grandmont, is described as follows: "Sieze the upper lid with Snellen's forceps, cut through the skin parallel to the free border of the lid, the incision being three or four millimeters from the border and about two centimeters in length. (2) Raise this cutaneous flap, detach and excise the corresponding portion of the orbicular muscle so as to expose the entire tarsus from the ciliary border to and including the tendon levator palpebræ. (3) Cut through the entire thickness of the tarsus to the extent of two centimeters parallel to the free border of the lid from two to four millimeters. (4) Describe a curvilinear incision, the cavity downward and extending from one end of the first incision to the tarsus of the other; this incision should extend through all the tissues of the lid, including the conjunctiva. (5) The upper or orbito-palpebral flap should

then be stitched to the lower or tarsal flap by three sutures without touching the skin."

Dr. Eugene Smith (Detroit) gives us the following as a new method of operating in the annoying and often distressing affections, trichiasis, districhiasis, and entropion: "After placing a Snellen clamp on the lid, he makes an incision with a Beer's knife along the free border of the lid between the faulty and normal cilia; the incision to be carried well up to the hair follicles, which are usually plainly seen after the hemorrhage has been arrested. In case the wound does not gap, which it usually does, then lift the anterior lip of the wound with a pair of forceps; this will bring into view the hair follicles, which must now be delicately touched with a very fine pointed galvano-cautery electrode, exercising great care not to destroy or obliterate the canals of the tarsal glands and thereby cause tumors and contractions of the cartilage. After destroying the follicles of the offending ciliæ, wash the parts in a 1–5,000 sublimate solution, place on the closed lid a pledget of cotton dipped in this same solution, and fasten with adhesive plaster. This dressing should be left on twenty-four hours, by which time the wound is usually united. In mild entropion with slight incurvation Dr. Smith makes a groove in the cartilage."

Dr. Guaita having performed an operation three hundred and fourteen times to induce quick healing in dacryocystitis with good results, describes the method of procedure as follows: First, curette the lachrymal sac and introduce a decalcified bone canula in the lachrymal canal, which has been previously widened by an incision, the operation to be done under strict antiseptic precautions. He cautions the operator on the introduction of the canula to exercise great care lest it fold upon itself and thereby prevent introduction into the canal.

We have, in the Medical News of January, a case of homatropia susceptibility reported by Dr. George M. Gould. He used an eight-grain solution and did not exceed two drops. This resulted in great swelling of the lids. The cheeks for two inches below were puffed and discolored. In this regard I wish to report a case of poisoning from this drug. On February 10th Miss F. H. F. called at my office to consult me about her eyes. After asking her a few questions I decided she had an error of refraction, and at once began to instill in her eyes a solution prepared the day previous, containing four grains of homatropinia hydrobromatis to two drams of distilled water. This I dropped in her eyes every five minutes for half an hour. After waiting one hour from the last drop instilled in her eyes, I called her in to test them. I noticed, as she came toward me, that her gait was unsteady; but being a child fourteen years old, and an exceedingly nervous one, I paid no attention to it; but when she failed to enunciate her letters with distinctness, I asked her if she felt badly; she replied that she felt slightly nauseated. Within ten minutes she lost complete control of her lower limbs, this being quickly followed by drowsiness. Pulse rapid and fluttering. I gave her a stimulant and one eighth of a grain of morphia. I then called in Dr. Young to assist me. He gave her the second dose of morphia one hour after the first. It was four hours before she was perfectly conscious, and at least six hours before she had good use of her limbs. On the following morning I found she had hypermetropia, $\frac{20}{120}$. The pupils remained dilated for three days. I was sure of my drug, because I had used it the day previous, the same day, and also the following day without any other unfavorable symptoms. I can account for this unusual case only on the grounds of a peculiar idiosincrasy.

The improvements in cataract operations in the last few years, and especially in regard to the after-treatment, have been very great. We have now no more dark rooms, milk diet, and almost solitary confinement. Instruments have been improved and many new ones devised. At present nearly all our instruments are constructed so that they can be thoroughly cleansed and treated antiseptically.

Gruening has constructed a set of ophthalmic instruments, exclusive of knives and scissors, the handles of which are made of platinum and iridium, which may be sterilized by heat in the fraction of a minute. A new instrument devised by Black, for removing foreign bodies from the cornea, consists of a round needle-like shaft, the end of which is flattened and the extreme tip slightly hooked, making it spoon-shaped, and useful either as an elevator or tractor.

Dr. S. M. Payne has a knife for the removal of pterygium, which has a flat curve, double-edged point for about one third its length, the remainder of the blade being dull. He has also devised an eye-speculum which is an improvement on the wire speculum for lightness and strength. I received from Mr. E. B. Meyrowtz a cut of his improved registering proimeter; the improvements make it simple and more practical.

Pyle has devised a self-retaining lid elevator, the object of which is to do away with a speculum and an assistant in cataract operations. He also presents to us a fixation forceps, the jaws of which form the segment of a circle corresponding with that described behind the limbus of the cornea. His claims for this are that a larger amount of the conjunctiva can be siezed, and at the same time the eye is so embraced as to effectually prevent the rotation of the eye on its horizontal and vertical axis. We have a new ophthalmoscope constructed by Jackson, an optometic and

ptakometic ophthalmoscope devised by Parent, an electrode by Knapp, for cauterization of corneal ulcers, as well as an improvement in his roller trachoma forceps, which consists in the ready removal of the steel roller, thereby making it entirely antiseptic. In fact, I might spend some time in enumerating the recent improvements and inventions, but I feel that I have already consumed too much of the valuable time of this Society, and that I must thank you all for so patiently bearing with me.

DISCUSSION.

DR. J. M. RAY, of Louisville: The surgical operation then is certainly the best. By its aid we can, in the couse of a few weeks, do more in the treatment of granular lids than we can by local application in the form of cauterization or astringents in months. However, after granulated lids have passed through the acute inflammatory stage into the stage of atrophy, in which stage we have the so-called sequelæ to granular lids, the surgical treatment is out of the question. The treatment then should consist of antiseptic astringents and oleaginous medicaments to lessen the friction of the lids and lubricate the conjunctiva. The so-called surgical treatment of granular lids is confined entirely to the early stages, during the stage of hypertrophy, the acute inflammatory stage. I have seen a number of cases where it had passed in through this stage, and have found on version of the lid that the conjunctiva was glazed, and passing through from the inner to the outer canthus I found cicatricial contraction. Surgical treatment here can do no good. Therefore, in order to be successful in the surgical treatment of granular lids, the operation must be done early and during the acute stage.

DR. S. G. DABNEY, of Louisville: I should like to say a word about the mechanism of the operation. It is well known that when the cicatricial contraction has taken place expression will be no longer useful; it is well known that operations for other purposes are often indicated; but in these earlier

stages, when operation for expression is useful, there have been a number of different devices employed. Some surgeons use a simple cutting rod, in many places producing scarification, and rubbing in a solution of bichloride of mercury. Others prefer the Knapp forceps. In my opinion the use of the Knapp forceps is attended with the best results. I believe in the beginning too much was expected; the reports first given were too favorable in regard to the operative treatment of trachoma; as is frequently the case in new operations the pendulum swung too far in favor of the operation, and now we have learned what to expect and what not to expect. I believe, in the early stages, and even when some cicatricial contraction has taken place, an operation is frequently beneficial; the contraction in the cul-de-sac is in itself hardly a contra-indication to the operation. We often find a great deal of hypertrophy and remaining papules in the conjunctiva, and their expression hastens very much the result of the case.

DR. T. C. EVANS, of Louisville: In regard to the use of cocaine in these operations for trachoma, I would state that it is a peculiarity of the trachoma or granulated lid that cocaine is not absorbed from the conjunctiva, and we get very little effect; a general anesthetic is therefore necessary in all such operations either in the first or second stages. I agree with the gentlemen who have already spoken, that the general profession has got an erroneous idea of the new operation, in that the belief is quite general that surgical means are followed by immediate relief. It is a very valuable operation, and almost indispensable; but we frequently see the results of it delayed for several weeks after the squeezing. Even in the more acute cases it is not immediately successful, as seems to be rather the general impression, but we must wait several weeks for contraction to take place.

DR. P. RICHARD TAYLOR, of Louisville: I have used the incision, the scalpel, and Knapp's trachoma forceps. I can get equally good results from the forceps and from the scarifying process. Both produce the same result. Take granulated lids, whether we have trachomatous matter either in the tissue or in the conjunctiva, or excessive granulation, it simply sets up an acute inflammation in a structure where there was a low

form, and this acute inflammation extends into the conjunctival structure itself, and pressure of the forceps produces a cicatrix in the conjunctiva, and we have the cicatricial tissue contracted to such an extent that it renders the conjunctiva bloodless. The procedure will therefore necessarily lessen inflammation and absolutely prevent granulation. Where we have scar cicatrix we can not have granulation, as there is no blood supply for nutrition. When we press out the trachomatous material with the forceps, we reduce bulk in the conjunctiva, and set up an active inflammation. It takes as a rule one to three months to get rid of an active or severe case of granular conjunctivitis, either by scarifying or by the forceps. It is absolutely necessary to anesthetize the patient, since cocaine is of no avail, from the fact that the tension is so great in the conjunctiva that the local anesthetic not being absorbed will not reach the terminal ends of the sensory nerves.

DR. OLDHAM: I have used trachoma forceps with poor success, not at all flattering. I do not wish to leave the impression that my treatment has been pursued with the aid of cocaine; I agree that cocaine will not answer, and that a general anesthetic is much preferable.

VITAL AND MORTUARY STATISTICS OF KENTUCKY FOR 1892: A REPORT.

By T. B. Greenley, M. D.
Orell, Ky.

You perceive that I am again at my post as reporter on Vital and Mortuary Statistics of the State. It may be said when you have to work, with nothing to work on, the task is more laborious than if a due supply of material was at hand. For several years I have been at work on this subject without any material of our own to base a report on, having to borrow from the United States Census Report for data. I felt confident that by this time the volumes pertaining to population of the census returns for 1890 would have been published, so that I could make a report from them for our State the present year by computing a ratio of increase in births and deaths for the past two years.

On writing to Dr. Billings, U. S. A., on the subject, he was kind enough to do me the favor of sending me an abstract of the data pertaining to statistics of life and death. He says:

Dear Doctor: The census data for 1890 with regard to the vital statistics of Kentucky are not yet published, and, in fact, are not as yet compiled in a shape to be of much value for your purpose. Nevertheless, it is certain that these census reports of Kentucky, as regards the death-rates, are very incomplete and unsatisfactory.

The total number of deaths reported during the census year by the enumerators for Kentucky was 23,877. The population of the State was 1,858,635, which would give a death-rate of 12.8 per 1,000.

The true death-rate was probably about 16; that is to say, there were probably about 30,000 deaths in the State during the year. The deaths reported by the census enumerators among the native-born whites numbered 17,446; among the foreign-born whites, 1,177; of whites whose birthplace was unknown, 775. There were reported 4,479 deaths among the colored. Of deaths under five years of age, 6,789 were reported among the whites, and 1,572 among the colored. The number of deaths reported for special causes was as follows: Whooping-cough, 539; scarlet fever, 107; measles, 513; diphtheria and croup, 1,115; typhoid fever, 1,048; malarial fever, 514; diarrheal diseases, 1,671; cancer and tumors, 412; consumption, 3,538; pneumonia, 1,924; childbirth and puerperal diseases, 298.

These are all the data which I have at present which would be of special interest for your purpose. While you can not get death-rates that would be of any value, that is to say death-rates calculated from the number of deaths to the number of living population, the proportion of deaths from certain causes can be calculated from the above figures, and may be of some interest. Regretting that I can give you no more satisfactory information, I remain,

Yours very truly,

JNO. S. BILLINGS,

Surgeon U. S. A. in charge of Vital Statistics, etc., 11th Census.

In my report to this Society last year I made the population of the State to be 2,194,300. This calculation was based on the ratio of increase from 1870 to 1880, the increase being 27.5 per cent in the decade; and if the same per cent is added to the population as reported in 1880, it would be, as I stated in my last year's report, 2,047,000, instead of 1,858,635, as reported by the enumerators for 1890. Then, if we add 27.5 per cent to the census report of 1880, we have for the year 1892 a population of 2,230,400, an increase in twelve years of 545,810, equal to 32.5 per cent. As I remarked in my last report, this is a reasonable calculation, as it is presumable that the increase of popu-

lation would continue to be as great from 1880 to 1892 as it was from 1870 to 1880, as we have had no epidemics worthy of notice during that time, and from what we can learn immigration was fully as great or greater than for the former decade. Then it strikes us as being very evident that the enumerators of the last census omitted to report a very large number of our population.

As Dr. Billings remarks, the number of deaths as reported no doubt is incorrect, which he thinks should be about 30,000, which would make the death-rate, as he states, about 16 per 1,000 of the population instead of 12.8. But if we had a correct enumeration of the people the death-rate would not be as high as the doctor's estimate. If we base the death-rate on my estimate of the population in 1890, which was 2,047,000, we would have a death-rate of 14.167 to 1,000, concluding that Dr. Billings' estimate of 30,000 deaths to be correct. This rate of mortality approaches very closely to that of 1880, which was 14 per 1,000. The mortality reported for 1880 was 23,718, varying but little from that of 1890, being only 119 less.

The number of children born in 1880 was 52,982, or 1 to 31.43 of the population; and the rate of births to deaths, 2.24 to 1. The rate of males was 1.19 to 1.17. The deaths of 1880 over those of 1870 was 9,373, showing a heavy increase in mortality, but the latter named year was unusually healthy, the rate of deaths being only 10.86 per 1,000. The increase of births was 10,962, or 26 per cent. If we make the same ratio of increase from 1880 to 1892, the number of children born in the latter year would be 63,578. The census of 1880 shows that of all children who died under five years, 60 per cent died under one year of age. The deaths of children under five years old reported for 1890 was 8,361, or 35 per cent of the mortality.

The following statement shows the difference in the

mortality from the diseases named between the census years 1880 and 1890: Mortality from scarlet fever in 1890 was 107 and 515 in 1880; measles, 513 in 1890 and 258 in 1880; whooping-cough, 530 in 1890 and 313 in 1880; diphtheria and croup, 1,115 in 1890 and 1,119 in 1880; malarial fever, 514 in 1890 and 763 in 1880; diarrhea, 671 in 1890 and 248 in 1880; puerperal fever and childbirth, 298 in 1890 and 408 in 1880; typhoid fever, 1,046 in 1890 and 710 in 1880; cancer and tumors, 412 in 1890 and 283 in 1880; consumption, 3,538 in 1890 and 2,937 in 1880; pneumonia, 1,924 in 1890 and 1,642 in 1880.

The deaths from these diseases in the aggregate amount to nearly 45 per cent of the whole mortality for 1890, and are 1,557 greater in number than those from the same causes reported in 1880.

The mortality in the city of Louisville, as per report of Health Officer Dr. Galt, for the year 1892 was 3,384, against 3,087 for 1891, being .087 per cent greater than that of the latter year; perhaps, however, no greater than the increase of population. There were 1,756 males and 1,628 females; 2,486 whites and 898 colored; single, 1,689; married, 1,524; not stated, 171. Died from accidents—railroad, 29; burns and scalds, 28; all others, 52; drowning, 12; homicide, 29; hanged, 1; suicide, 21; poisoning, 10. In all from these unnatural causes, 182. In numbers consumption stands at the head of the list, 381; pneumonia, 253; old age, 228; heart diseases, 160; inanition, 157; typhoid fever, 116; bronchitis, 120; diphtheria, 102. Natives of the United States, 2,504; foreign born, 880. Deaths under one year, 586; one to two years, 150; two to five years, 209; five to ten years, 135; ten to twenty years, 217; twenty to thirty years, 377; thirty to forty years, 312; forty to fifty years, 276; fifty to sixty years, 303; sixty to seventy years, 327; seventy to eighty years, 258; eighty to ninety years, 126;

ninety to one hundred years, 18; over one hundred years, 6; not stated, 74.

The population of Louisville at present is estimated to be at least 200,000, which would make the mortality 16.90 per 1,000. When we take into consideration the greater mortality among the colored people, we must conclude this to be a light death-rate when compared to many other cities in the Union. In fact, there are but three cities in the South where the death-rate was not greater in 1890 than in our metropolis, and in two of these, if we count the difference between the death-rate of the negro population and the whites, Louisville will stand equal with them. The two cities alluded to are St. Louis and Atlanta. Nashville is reported to have had a less death-rate than any city in the South for 1890. And if we compare the mortality of Louisville to that of the Northern cities we find only three, as reported, below that of Louisville; these are Indianapolis, Rochester, and Worcester. The average mortality of the colored people of the cities of the United States in 1890 was 11.30 per cent greater than that of the whites.

It will be perceived that even the city of Louisville is still without childbirth statistics. It will be remembered by this Association that I have been the committee to report on the vital and mortuary statistics of the State for several years past, and that I have complained in each report on account of having no statistics of our own to report on, having to resort to the decennial census report of the United States and make ratio calculations as to the birth- and death-rate for the year being reported. This is no little work, but your reporter would care but little for the labor if he was satisfied as to its close approach to correctness. But, of course, we can only base our calculations on the births and deaths of every tenth year. We all know that these rates vary from year to year from different causes

in action, and no positively accurate report can be made for any particular year on what took place in a year a decade since. But, under the circumstances, it is as near as we can come to our birth- and death-rate.

I had hoped at our last meeting I should have been able to report some progress in the way of obtaining a statistical account pertaining to our population by the time of our regular meeting this year, but so far there has been no advance in this particular. In the first months of last year I wrote out what I regarded to be a suitable article in the form of a statute, based on the law of Indiana for the same purpose, and gave it to the Jefferson County representative in the legislature, with a promise from him that it would be presented to the House for action in a short time; but he thinking a medical man would take more interest in the matter and understand it better, himself being a lawyer, handed it over to a doctor member, who, my friend informed me, promised to bring it before the House in a short time. Since that I have heard nothing of it, although I have written the doctor on the subject on two different occasions. I can only account for the doctor's negligence in this particular on the ground that he has abandoned the practice of medicine and turned politician, thereby losing all interest in the welfare of the population of his State.

It would seem to me that every practitioner of medicine should feel a deep interest in the sanitary condition of our people, and be glad to be familiar with the birth- and death-rate thereof. This kind of feeling so pervades my mind that sometimes I am apprehensive that I may be regarded by some not so much interested as being somewhat cranky on the subject. But be this as it may, I think I am acting in accordance with the well-known pride that Kentuckians generally possess.

In a former report I have alluded to the fact that our Auditor's report of the various statistics of Kentucky will compare favorably with that of any other State. In many respects we excel any other State in the Union. In some farm products we stand far ahead. We produce half the tobacco of the country, ninety per cent of the hemp, the best whisky in the world, as well as the finest and fastest horses, and, it is said, the handsomest women; and this I believe to be true from observation, if I am not too old to be a judge. Now what citizen of our State is not proud of such statistics? I presume one could not be found. A Kentuckian loves to talk about these things, especially when abroad among strangers, and if feelings of pride enthuse him we can only regard it as being commendable. But suppose that this Kentuckian abroad should be a physician, and after expatiating on the statistics of his State pertaining to the things we have mentioned, his listener should ask him in regard to the sanitary condition of his people and want to know something about the birth- and death-rate. Our proud fellow citizen is now somewhat nonplussed. We can very readily appreciate his feelings. After talking proudly about every thing else concerning his State, he must feel greatly depressed in spirits when compelled to acknowledge, like my friend Dr. Yandell did lately when called on to testify in a certain intricate case, that he did not know any thing regarding the matter and did not believe any one else did. But we might say this proud Kentuckian could excuse himself on the ground that he did not take any part in making the laws of the State. But here we are confronted with the old-time saying, "that what's everybody's business is nobody's business," but we must not endeavor to let ourselves out of a dilemma by any such excuse. What is everybody's business should be regarded by each individual of everybody

to be his particular business to assist everybody to do what should be done for the general good.

As before remarked, if any portion of the community should be interested in the welfare of the people it is the medical profession, not in a money sense, but as philanthropists. And I think if all our medical men would act in concert we could get a proper law enacted by which we could obtain the necessary statistics pertaining to the sanitary condition of our people, as well as the birth- and death-rate. Now, gentlemen, when we earnestly consider the question of statistics of a State, we must conclude that the public welfare is at least of as much importance as the number of pigs or calves we raise, or the quantity of wheat or corn we produce. We should be equally informed as to the sanitary condition of our people, the increase of population, and their birth- and death-rate. A neglect of our duty in this particular would seem to be retrograding on our part in matters pertaining to sanitation and public health. Within our own time great advances have been made as it respects this subject.

The great minds of Mapother, Southwood Smith, Playfair, Chadwick, and others gave it such impulse that many thought it was of modern origin. But if we revert to ancient history we will find that the welfare of the people, as it respects public health, was a matter of legislative consideration. The Jews had their Mosaic code, probably the most ancient on record. The Greeks and Romans, although not like the Jews, making hygiene a part of their religious duties, were far from neglecting it. "The laws of Lycurgus," says Dr. Gairdner, "are not wanting in very pointed enactments on sanitary matters; and the importance attached by all Greek republics to physical culture is too well known to require remark."

The Romans appointed physicians as health officers to

supervise the welfare of the people in this particular. But during the night of the Dark Ages superstition prevailed over reason, and sanitary science, with other branches of knowledge, slept in a sepulcher of gloom. But now, as darkness has changed to light, the night of ignorance and superstition vanished, and reason resumed her throne, we should rejoice at our freedom.

Then let us hope that in the future our people, and especially our profession, may take greater interest in this part of our statistics and induce our representatives in the legislature to provide proper means for their collection, so that our proud Kentuckian when abroad may not have cause to blush with shame on account of ignorance when questioned in regard to the population of his State.

Let us believe in the adage that " Public health is public wealth."

DISCUSSION.

DR. J. N. MCCORMACK, of Bowling Green: As Superintendent of the Committee on Vital Statistics of the State Medical Society I was very much interested in Dr. Greenley's paper, and very much indebted to him for the excellent work done from year to year in this regard. Owing to the press of other medical legislation the imperfect law now on the statute books in regard to vital statistics has not been revised, but as all the other legislation which was pressing referring to medical matters has now passed the legislature, I expect to turn my attention to that piece of legislation in the near future, and I hope before the Society meets again we will have on the statute books a statute which meets modern views and modern methods in this regard. I hope to avail myself of the labors of Dr. Greenley in this matter.

TUMORS OF THE NECK.

By W. L. Rodman, M. D.
Louisville, Ky.

No region of the body is so prolific in neoplasms as the neck. No region of the body is so important from an anatomical and surgical standpoint, containing as it does many great vessels and nerves, the integrity of which is essential to life. Therefore the diagnosis and treatment of morbid growths in this situation are of commanding interest. Never passed the time, since surgery has been practiced as an art, that its followers everywhere have not approached operations upon the neck with the greatest caution, if not trepidation. While a proper amount of anxiety should attend all operations in so vital a spot, I shall endeavor to show that the danger incurred in the removal of tumors from the neck varies as widely as the many neoplasms differ histologically.

Tumors superficial to the deep cervical fascia are comparatively easy of diagnosis and safely operable, presenting no greater danger than similar growths in other regions of the body. The only vessel of importance is the external jugular vein, and this can usually be avoided; as it is a prominent landmark in the neck the danger from cutting it is not great. I have twice wounded it myself, and have seen others do so without trouble. Tumors originating beneath the deep cervical fascia, on the other hand, present the greatest difficulties in their diagnosis and removal. Tumors of the neck are common at all ages. They are

congenital and acquired, cystic and solid, benign and malignant. This region is pre-eminently the site of congenital cysts, and I know of no other which compares to it in this respect.

Many tumors which are usually thought to be acquired are congenital, being held down by the deep fascia and prevented from appearing externally. A congenital cyst may not form a distinct and well-outlined tumor until adolescence or middle age. This knowledge is of great value in diagnosis and treatment.

Cysts as they occur in the neck embrace almost every known variety.

1. The simple, serous, or unilocular cyst is frequently met with in the subclavian triangle, and may pass downward under the clavicle into the axilla or chest. They contain, as a rule, a colorless, limpid fluid, and are usually called "hydroceles of the neck." This cyst is congenital or acquired, and may be above or beneath the deep cervical fascia. It is usually translucent and covered by smooth, thin skin of natural color. The aspirator would settle the diagnosis in any doubtful case. These cysts are supposed to grow from the branchial clefts, and have been accurately described by Maunoir, Phillips, and others.

Treatment. When practicable they should be excised. When deeply attached it will be better to excise a portion of the cyst wall, drain freely, and plug with iodoform gauze. The old treatment of tapping and injecting with iodine, carbolic acid, etc., is uncertain and dangerous. Setons are more so. Spontaneous recovery has followed accidental rupture.

2. The second variety of cyst encountered in the neck is the compound or multilocular, the cystic hygroma of some authors, the lymphangeioma cysticum of others. It is generally congenital, and develops from the lymphatic

vessels. It is most obnoxious to the carotid triangles. The different compartments of these cysts vary in size from a small shot to an orange. Their contents vary as widely as their size. Every sort of fluid, semi-solid and solid material may be found in them. They are usually situated beneath the deep fascia, but may perforate it and present superficially. They are attached to every thing, vertebræ, muscles, vessels, and nerves, which makes their removal always a serious matter, often an utter impossibility. No other treatment, however, is at all satisfactory, and most authors recommend excision with all its primary and secondary dangers.

The internal jugular vein, carotid artery, and pneumogastric nerve have been excised in removing these growths, the patients in some instances making excellent recoveries. They are recognized by their tuberculated outline, fluctuation, and preference for the carotid triangles.

3. The bloody cysts or hematoceles may be met with in the neck. Sometimes they are hydroceles into which a vessel has ruptured. There is, however, a true bloody cyst intimately connected with the great vessels. Their contents resemble blood, and it is said that they are cyst-like dilatations of the internal jugular vein. They may or may not communicate with the interior of the vessel. Subsidence of swelling upon gentle pressure would be an evidence of such communication, and a useful hint as to treatment as well.

4. Sebaceous cysts are frequently met with in the neck. They are superficial and deep, usually the latter, as pointed out by Von Langenbeck, differing in this respect from similar cysts in other parts of the body. Superficial sebaceous cysts are likely to occur in the thyro-hyoid region, and are easily enucleated. They may attain the size of an orange. Deep epidermic cysts are, according to Gross, invariably

situated in the superior carotid triangles, usually the left. They are frequently connected with the sheath of the vessels, and when the head is in certain positions pulsate synchronously with the heart. They give a pulpy fluctuation, which is best elicited by putting one finger in the mouth and the other over the tumor. Von Langenbeck advises extirpation with all of its risks and hazards.

5. Bursal cysts, developed from the two normal bursæ situated along the middle line of the neck, are infrequently found. The upper bursa is found between the hyoid bone and thyroid cartilage, the lower and larger one between the thyroid cartilage and skin. These tumors are diagnosticated by their situation, viscid contents, and obedience to the movements of the larynx. They are rarely so large as a walnut.

6. Hydatid cysts have in rare instances been found in the neck. Erichsen reports two cases, one removed from the subclavian triangle of a woman upon whom he had previously operated for hydatids of the liver.

7. Along with cysts may be mentioned the air cyst or goitre aerien. It is caused by a hernia of the mucous membrane of the larynx or trachea through their cartilages or rings respectively. They disappear upon pressure, vary with respiration, and enlarge after exertion. It is a rare affection, and occurs in those who use the voice constantly, as the auctioneer or public crier.

8. Thyroid cysts are less common in America than in the mountainous regions of Europe and India. They are particularly common in the Alps and Himalayas. I have seen several well-marked thyroid cysts here in Kentucky. These cysts, which are usually multiple, generally affect the lobes of the thyroid gland, rarely the isthmus. The right lobe more commonly suffers, which will place these tumors in the right inferior carotid triangle. The cysts

vary in size from a pea to a fist, and contain different kinds of fluid, rather viscid, bloody, with an abundance of cholesterine. They obey the movements of the larynx. Women suffer more frequently than men. The trachea may be pushed well to the opposite side.

Treatment. If the disease is limited to either lobe, the proper treatment is by excision. Prof. Kocher, of Berne, who has lived for years in a goitrous district, and has excised the thyroid gland, in whole or in part, far in excess of other surgeons, is emphatic in his approval of partial thyroidectomy, but condemns removal of the entire gland. Myxedema follows the latter operation in nearly every instance. He followed his cases carefully, and in only two out of eighteen complete thyroidectomies were the symptoms of myxedema wanting. In both of these the bronchocele returned, and it is fair to assume that he did not remove the entire gland. Of twenty-eight partial thyroidectomies, the general health of the patients did not suffer in any. The experience of other surgeons has been not unlike Kocher's, and few, if any, advise total extirpation of the gland. If a portion of it is left, the distressing and fatal symptoms of myxedema do not occur. Where excision is not practicable, incision and drainage should be followed. Tapping and injections, while curative in some instances, are on the whole more dangerous and less certain than incision.

The other enlargements of the thyroid gland may as well be disposed of now. Benign tumors do not affect the thyroid, and the only innocent affection of a solid nature to which it is liable is the fibrous bronchocele. It is simply an hypertrophy of the normal glandular and connective tissue. It may affect the entire gland, but, like cystic disease in this situation, is most obnoxious to its lobes, especially the right. The isthmus rarely suffers alone.

Circumscribed hypertrophic conditions of this gland are by some called adenomata. Enlargements of this body in goitrous districts are frequently associated with cretinism or idiocy. *Per contra*, idiocy, so far as I am advised by the Superintendent of the Feeble-minded Institution of this State, does not predispose to enlargements of the thyroid. Malignant disease, carcinoma, and sarcoma rarely affect the thyroid. Cancer is by far the more common affection, and may exist as encephaloid or scirrhus. It appears late in life.

Treatment. Nothing can be done for malignant disease. The only hope would be in complete removal of the gland, and this is certain to be followed by myxedema. The solid bronchocele should be excised under the same rules governing operations for cystic disease. In very exceptional instances there may be accessory thyroids in the neck, within the larynx, trachea, etc., and they give rise to the same enlargements peculiar to the normal gland. Benign solid neoplasms are found in all parts of the neck. The most usual growths are lymphoma, enchondroma, fibroma, and lipoma. There is besides a local hypertrophic condition of the skin which at times is so distinct as to give the appearance of a tumor. The vessels in the affected area are much enlarged. This is really a *nevoid* condition.

Lymphomata are the most common of benign growths. They will generally be found in the submaxillary, occipital, and subclavian triangles. One gland is, as a rule, affected. Enchondroma is practically limited to the submaxillary triangle, where it affects the submaxillary salivary gland. I have never seen it in any other region of the neck. Fibromas are not specially common, and where they occur do so indifferently. No region is specially liable to them.

Lipoma or fatty tumor, while not frequent, is sufficiently common in the neck. They are very generally superficial to the deep fascia, and when so are easy of removal, what-

ever their size. My belief is that they are more commonly situated in the inferior carotid triangles than other parts of the neck. They may attain an enormous size, as shown by the photographs which I pass around, kindly sent me by my friend Dr. Samuel Swope, of Marion, Ky. Each had grown from twenty to twenty-five years.

Sterno-Mastoid Muscle. There is a circumscribed swelling of the sterno-mastoid muscle which is at times so pronounced as to give decidedly the appearance of a neoplasm. Bryant and Holmes, who have epecially investigated the subject, speak of it as though it were peculiar to the newborn infant, and due to some injury during parturition. They are more common in breech presentations. It unquestionably occurs in adults. I have seen two well-marked examples of this affection. Three years ago a farmer, about fifty-five years of age, living in Indiana, presented himself at the surgical clinic of the University with a well-marked circumscribed swelling in the right mastoid muscle. No history of syphilis or *trauma*. The muscle could be lifted up sufficiently to clear up any doubt as to diagnosis. This man was given iodide of potassium, blistered locally, and was practically well within a fortnight.

Malignant Tumors. Malignant disease of the neck may show itself in at least three different varieties. There are sarcomas, carcinomas, and the local enlargements incident to Hodgkins' disease, or, as we prefer to call it, lymphadenoma. Sarcomata are more frequent than carcinomas. Cancer never begins in the lymphatic glands primarily, and sarcoma does so but rarely. Both sarcoma and cancer are, in my judgment, usually found after forty, and are likely to be situated in the occipital or submaxillary triangles. Sarcomas give a most deceptive sense of fluctuation when well advanced. The skin is discolored a deep red or violaceous hue, and in time ulcerates. Hemorrhages take

place from time to time, and aid in hastening the end. Sarcomas attain an enormous bulk.

Treatment. Unless seen and diagnosticated early, these cases are, in my judgment, not operable. No operation for malignant disease promises success unless considerable tissue can be sacrificed. This can not be done in the neck. These growths are always more adherent than they seem to be, are exceedingly vascular, often accompanied by enlarged glands, which render their complete removal a matter of impossibility.

The primary and secondary dangers are so great from operations for the removal of these growths that the wise surgeon will as a rule decline to interfere, for at best he has little prospect of doing substantial good. Lymphadenoma affects the lymphatic glands of the neck early in the disease. The diagnosis of this affection can only be confounded with tubercular adenitis. As a rule no trouble should be experienced in differentiating between them. Tubercular glands always begin in the submaxillary triangle, whereas in lymphadenoma the enlarged glands are first seen in the carotid and subclavian triangle.

Tubercular glands are, as a rule, small and unilateral; in lymphadenoma, larger and bilateral. Tubercular glands often break down; lymphadenomata rarely do so. Above all, tubercular glands are most common between ten and thirty years of age; lymphadenoma occurs at any age, and men are more liable to it than women. Tubercular adenitis runs a chronic course, lymphadenoma an acute one. Surgery promises but little in lymphadenoma.

Tubercular Glands. No paper upon tumors of the neck would be complete without a description of the most common of all swellings in this region, tubercular lymphatic glands. While these growths are inflammatory and not neoplastic in origin, still their history and operative treat-

ment so closely resemble neoplasms that clinically we treat them as such. They are most common between ten and thirty years of age. The African and mulatto are very liable to them. They are unquestionably due to the tubercle bacillus, which gains entrance through a lesion of the skin, mucous membrane, socket of carious teeth, etc., and then carried by the lymph-vessels to the nearest lymphatic glands and deposited in their interior. The first glands affected are almost invariably the submaxillary. At first a single gland is enlarged. Later on, when it is no longer able to filter out all tubercle bacilli, they pass on to the neighboring glands, and so on possibly until the entire chain in this region, superficial and deep, become implicated in the tubercular process. So that we have first the submaxillary glands enlarged, next the occipital, lastly the subclavian. These all belong to the superficial chain. The deep lymphatic glands are situated immediately beneath the sterno-mastoid muscle, from its origin to its insertion. These, in part or in whole, sooner or later join in the tubercular inflammation.

In an advanced stage of this affection every gland on one or both sides of the neck may be enlarged. It may run an acute, subacute, or chronic course. Death may follow from miliary tuberculosis within a few months, or the disease may remain localized in a single gland for many years. The lymphatic glands are truly the "watch dogs of the system," and it depends upon how well they do their work what is to be the fate of the individual. As long as infection of the tissues, especially the lungs, is prevented, the disease runs a safe course. The capsule of the gland aids materially in localizing the germs and spores, and preventing infection of the surrounding paraglandular tissue. Separate for a time, tubercular glands usually fuse together, moving as a whole, the outlines of each, how-

ever, being usually distinct. The first infected are the largest, possibly attaining the size of a walnut, while those involved late in the process are no larger than a pea. Tubercular glands may become caseous or break down. Those first affected are most likely to do so, but they do not suppurate in a literal sense. The fluid or so-called pus is sterile. Sometimes an acute process is engrafted upon the chronic, these glands becoming affected secondarily by the ordinary pyogenic organisms. Then true suppuration occurs, and the glandular tissues and tubercle bacilli are destroyed by the acute process, which ends in abscess and drainage, a fortunate ending where only one or two glands are involved. Acute suppuration taking place in a large number of glands could only hasten death.

Treatment. If modern bacteriology and pathology go for any thing, we should not be in doubt as to the treatment of tubercular glands in the neck or elsewhere. Exposure of the diseased parts by a free incision, so that each gland can be seen, felt, and completely extirpated along with its capsule, constitutes the ideal treatment. Where it is practicable, Senn advises, and I think wisely, that the entire chain of diseased glands should be removed *en masse.* An incision from the mastoid process to the angle of the lower jaw, and thence along its lower border, would give free access to the glands usually enlarged. Senn removes the submaxillary salivary gland, if it is at all suspicious; also the lower portion of the parotid. The occipital and subclavian glands are easily reached and enucleated. If the deep chain of glands situate beneath the mastoid muscle are to be removed, one or two plans are open to the operator. An incision along the anterior or posterior edge of the mastoid may be made in order to gain access to the diseased glands. The fact that the carotid artery and the internal jugular vein have been injured in so many cases

is sufficient evidence to me that these incisions do not sufficiently expose the parts, and the surgeon depends entirely upon the sense of touch. Billroth cut the jugular vein sixteen times in one hundred and twenty-eight operations. So that the operator shall see and feel every enlarged gland, the sterno-mastoid should be cut across about its center, and each end reflected back. Afterward the muscle should be sutured with overprepared catgut or buried sutures of iron-dyed silk. The head should be held in one position to facilitate union of the ends of the muscle.

The results of Billroth, Fraenkel, Schnell, and others who have done many operations for tubercular glands are quite as encouraging as an optimist would expect. About twenty-five per cent of the cases operated upon suffer relapses, and require a second and third operation. When we remember that enlarged tubercular glands threaten life as long as they remain in the body, each being a focus for subsequent infection, and that in at least one case out of every eight miliary tuberculosis of the lungs follows, who can doubt what his duty is when a case of this kind comes to him for advice?

DISCUSSION.

DR. H. H. GRANT: I am glad to hear Dr. Rodman emphasize the danger of hemorrhage in operations about the neck; and I am also glad that he called our attention so particularly to the dangers of septic infection. It is in this point particularly, in operation for the removal of enlarged glands, that the danger lies, I think. There is even greater danger of the slipping down of the discharges from the infected wound than of fatal hemorrhage during the operation. No man can do an operation in the neck, especially where an incision is not freely made, without a nervous feeling when he undertakes to enucleate any of the glands that are deeply inserted; but it appears from Dr. Rodman's statements that even the division of the internal jugular is not attended with great danger, if,

of course, done directly under the eye of the surgeon. Fatal hemorrhage and the entrance of air into the veins are the great immediate dangers in operations here; but if the incision be made freely, not only are these dangers avoided, but the danger of sepsis from the hidden discharges is very greatly lessened. Dr. Rodman refers us to the consideration of lymphadenoma and tubercular adenitis together. In my experience in the early stages of lymphadenoma there is a very marked resemblance between it and tubercular adenitis. These enlarged glands begin, as far as my knowledge goes, upon one side, and not upon both; they gradually spread, however, to the other side. In tubercular adenitis there are usually enlarged glands on both sides, and although the location is a little different it is not by any means a common thing for lymphadenoma to begin on both sides. Usually it spreads gradually around beneath the neck, but the symptoms in the earlier stages are much alike.

It appears from what Dr. Rodman recommends that the operative interference is indicated in all tumors of the neck, except those of malignant disease. Therefore diagnosis is not of great importance, provided we can exclude malignant disease, and especially that malignant disease which directly attacks the thyroid body. I am entirely in accord with Dr. Rodman in respect to the propriety of complete thyroidectomy not being justifiable; but a very small portion of the thyroid gland may be left and perform its function. It is true that this operation is of no value in the treatment of malignant disease. The author did not call our attention to the presence of that form of tumor known as actinomycosis, which is prone to occur on the face. My experience has not led me to observe such tumors in the neck; in fact, I never saw them there, nor do I recollect to have seen a report of a case occurring in this region; but it occurs to me, from its being so common in the face, that it is likely to show at least some of its secondary manifestations in the neck. If tumors of this character should appear in the neck they would have to be discriminated from other tumors in this region. Dr. Rodman has so very many times presented in various societies the subject of tumors that I am disposed to refer to him altogether as an authority.

DR. RODMAN: In one point, as to the diagnosis between lymphadenoma and tubercular gland, I take issue with Dr. Grant. Tubercular glands almost invariably are unilateral in the earlier stages of the disease, beginning in the submaxillary triangle, and being confined to one side. This, though sometimes diverged from, is decidedly the rule; but lymphadenoma appears on both sides simultaneously. Tubercular glands appear at the upper part of the neck, and lymphadenomata in the lower triangle. What the doctor says as to actinomycosis is true. We might have secondary trouble in the neck, but I referred merely to the primary manifestations of the disease.

GENITO-URINARY SURGERY: A REPORT.

By W. R. Blue, M. D.
Louisville, Ky.

Amid the general advancement that has characterized all branches of practical medicine during the past year none can show greater progress than that of genito-urinary surgery. New remedies, new instruments, and modified old ones lauded by their manufacturers and advocates have appeared from time to time; a few have stood the test, but the majority, weighed in the balance of practical experience and found wanting, have gone the way of so many others that gave us fair promise in the beginning.

It is unnecessary, though time permitted, that I go into the etiology and pathology of all the diseases that come under our care. I shall endeavor, in as full and concise a manner as I am able, to describe the management of the most common diseases that we are called upon to treat, the results obtained in these cases by eminent men at home and abroad, together with such points as have from day to day come under my own observation.

Gonorrhea I mention first, since, of all the diseases that we are called upon to treat, it is the most frequent, and along with its numerous complications the hardest to subdue. How often have we seen cases of this universal malady going along beautifully, when suddenly there comes a change, and that, too, without any apparent cause, and despite all precautions. Our patient reports one day all smiles; discharge all gone; no pain; apparently well.

We congratulate him and his doctor, only to be summoned the following day to his bedside, where we find him suffering intense agony from an epididymitis, or, perhaps, a cystitis or prostatitis, and it is oftentimes hard to convince our patients that our treatment is not responsible for it. Its duration we can not foretell; its termination no one knows. We may cure one case in a few days or weeks, another case may linger for months or years, a constant reproach and a reprobate to all treatment.

During the year just passed I have treated thirty-one acute cases of gonorrhea with an average duration of thirty-eight days. I rely on self-treatment altogether, and with this result, that in none of these cases were there any complications. I will outline my treatment:

First, I order a diuretic, preferably potassium acetate in teaspoonful doses every four hours, taken in half glass of water, and continued from five to seven days, or until the subsidence of acute symptoms. A proper syringe is no small item. I order a Goodyear, No. 25, soft tip, capacity four drams; with this I have patient use the following washes: First, hydrogen peroxide 10 vols. (I prefer the Oakland Company's as being less irritating), a syringeful after urinating, at least four times daily. This removes effectually any discharge left, thus placing the diseased surface in fit condition to get the best results from the injection which follows. I append the following, a favorite wash of mine:

℞ Resorcin., ... 3j;
Zinc. sulph., ... gr. vj to xviij;
Glycerine, ... ℥vj;
Boric acid, sat. sol. q. s. ad., ... ℥vi. M.

In case there is much pain I add one dram of aqueous extract of opium. Under this treatment the discharge, as a rule, ceases in from four to fifteen days. Many combi-

nations of the zinc and lead salts will suggest themselves according to the case.

Dr. Glenn, of Nashville, Tennessee, in a recent article in the Journal of Cutaneous and Genito-Urinary Diseases, April, 1893, reports excellent results from the use of zinc iodide, 1 grain, and zinc chloride, ½ grain, to water 1 ounce. Of twenty-four cases treated, in all of which the presence of the specific germ was demonstrated, the average duration under this treatment was only sixteen days and seven hours. Deeming this method worthy of trial I have placed several cases on it, and hope at some future time to report results. Dermatol is still *sub judice;* as for myself I have been unable to obtain the flattering results reported by its advocates.

Alumnol is the latest candidate for favor in the treatment of gonorrhea. According to Chotzen (Notes on New Pharmaceutical Products, February, 1893,) a one- to two-per-cent solution injected three to four times daily causes the complete disappearance of the gonococci in from three to six days. I have used with but little effect as much as a four-per-cent solution.

Jadasshon, of Breslau (London Lancet, December 10, 1892), speaks highly of ichthyol. In anterior urethritis injections gradually increasing in strength from one- to five-per-cent solution, and in the posterior variety from one to ten, may be used. A one-per-cent solution exercised a decided anti-gonorrheal action in most cases, the specific germ disappearing more rapidly than with any other method of local treatment. In a certain number of cases it, like other remedies, failed; many cases unsuccessfully treated with nitrate of silver were cured by ichthyol, and *vice versa.*

I have abandoned entirely retro-injections and irrigations of the bichloride of mercury in this disease. They

neither shorten the duration of the disease, nor have I seen marked benefit result from their use.

In the chronic form of the disease under discussion the urethroscope, in its present perfected form, supplies a long-felt want and is an indispensable aid in its treatment, enabling us as it does to examine the entire urethra, thus locating the exact seat of the trouble and affording a ready means for the direct application of the remedies; nor is it alone applicable in the treatment of urethral troubles. As an aid in the removal of growths and foreign bodies in the urethra it is indispensable.

In urethritis granulosa, so called, I apply through the urethroscope sulphate of copper in stick, the surface having previously been mopped off with absorbent cotton. The instrument is passed beyond the diseased surface and withdrawn until it comes into view; the copper on a slender pencil is then applied.

In that condition known as urethritis sclerotica nitrate of silver is the remedy *par excellence*. A solution of five grains to one ounce of water applied on a swab usually suffices when the disease is not of long standing; much stronger solutions are necessary in the latter instance. Two to three applications a week are sufficient, and few are the cases that resist the remedy.

Packings of dermatol, iodoform, and boric acid have not given me such results as the silver and copper applied as stated. Sulphate of copper is likewise our most effectual agent in the treatment of erosions, ulcers, and chancroids of the urethra.

We come now to the complications of gonorrhea. A mere list of all of them would consume much time, nor is it necessary that we consider the more remote ones. In point of frequency posterior urethritis has first claim to our consideration. Diuretics and, if pain and tenesmus

be present, suppositories of opium and belladonna, along with bi-weekly injections of silver nitrate in strength varying from five to sixty grains to the ounce of water with the Keyes-Ultzman syringe, is good treatment. The efficiency of this treatment has increased its popularity in the past year, and it is doubtful if a better can be found.

Epididymitis next claims our attention. In this trouble the dry poultice of Langlebert, described to you by Dr. E. R. Palmer at our last meeting, is our most efficient agent at the onset. When pain and swelling are present the time-honored flaxseed tobacco poultice, secured by an improvised suspensory, along with complete rest in the recumbent posture, is still the accepted mode. When pain and swelling have subsided it is good treatment to apply the dry poultice as mentioned, held in place by a snug-fitting suspensory.

A passing notice of recent methods of treatment is of interest.

Halstead's method (Genito-Urinary Diseases, Vol. 1, Morrow,) consists in lightly touching the skin overlying the affected organ with a white-hot cautery point. He next applies an iodoform ointment secured by a suspensory. He claims that the application requires but a few seconds, and, if made skillfully, gives instant relief from pain in most cases, with the patient able to be up and about in comparative comfort. This is certainly heroic treatment, and I doubt if we can persuade patients in private practice to submit to it.

Prostatitis following gonorrhea is best treated by rest in bed, along with hot rectal enemas and sitz baths three to four times daily, leeches to the perineum and an anodyne suppository of opium and belladonna for pain and tenesmus. The application of cold to the prostrate through the rectum

has found favor with some German surgeons. (Genito-Urinary Diseases, Vol. 1, Morrow.)

In cystitis there is little new to mention as regards treatment. Daily washings with a warm saturated solution of boric acid, and the same drug given internally in ten-grain doses three to four times daily produces very gratifying results. Flushing the bladder with nitrate of silver solution, 1 to 5,000 or 1 to 10,000, is still advocated by many. I prefer the boric-acid treatment as giving me better results.

As regards the treatment of stricture it is about narrowed down to gradual dilatation and cutting, except in those cases where immediate interference is necessary, when rapid divulsion is brought into play, followed later on by urethrotomy. Should a stricture of large caliber in the pendulous urethra be diagnosed, an urethroscopic examination should follow. If it prove to be cicatricial, be it ever so large, I hold that the cutting operation is indicated. If not cicatricial, gradual dilatation or meatotomy will generally effect a cure. There is no doubt in my mind but hundreds of non-cicatricial strictures are cut annually, where a simple enlargement of the meatus was the only interference necessary.

In close stricture of the pendulous and membranous portions of the urethra, the Otis and Maisonneuve instruments, followed by bi-weekly soundings and daily flushings of the urethra with warm boric-acid solutions, do the work admirably. As a preparatory treatment, and to lessen danger from septic trouble, ten-grain doses of boric acid are given at intervals on the day preceding the operation.

The danger from hemorrhage following internal urethrotomy in the deep urethra, so much dreaded and talked of by our brethren in the East, has thus far never occurred with me. I find that the closer the stricture the less the

hemorrhage. I may say that I have performed the deep operation eleven times successfully, and in no case was the hemorrhage so great as in strictures operated on in the pendulous portion.

I consider that external urethrotomy is indicated only in those cases of impermeable stricture where, with the patient anesthetized, we are even then unable to enter the bladder with filiform bougies. A favorite method with Mr. Harrison in close stricture consists in the use of his elastic whip bougies, which gradually taper from a point up to 12 to 14 English. This he follows with steel sounds up to 15 or 18. I, however, saw him use the Maisonneuve frequently.

Rapid divulsion with the Thompson instrument is a thing of the past, since the operation often did more harm than good, lacerating healthy tissue which in time became cicatricial, thus leaving the urethra in a far worse condition than before.

Along with the urethroscope, which I mentioned earlier in the paper, the cystoscope, as an aid in the diagnosis of obscure vesical and kidney troubles, demands our earnest attention. Cystoscopy is gradually gaining ground and converting the skeptical. Of course there are and always will be some men in the profession who, unacquainted with its merits, will condemn it, but those who work with it constantly learn to appreciate its value. The cystoscope, like the O'Dwyer instrument for intubation, and like it opposed in many quarters, has come to stay. From personal observation and experience I am convinced that we have in it a most valuable addition to genito-urinary surgery. I am supported in this statement by the opinions of many men who have labored to make this work a success; among them Meyer, of New York, Fenwick, of London, and Grünfeld, of Vienna. I confess that I have made

false diagnoses with the instrument, but we must remember that cystoscopy is yet in its infancy; but I am at the same time consoled and encouraged in the reflection that like mistakes occur in the older branches of surgical diagnosis.

Before passing on to the consideration of buboes we will give passing notice to the local lesions that daily come under observation. Numerous remedies have been from time to time recommended in the treatment of chancroid, chancres, and abrasions, but up to date none have the value of our sweet-scented friend, iodoform. Aristol, dermatol, per-aseptol, and europhen I have used; the latter only gives any thing like the results obtained with iodoform. Cauterization is now only resorted to in sores that are serpiginous or threatening to become so.

In a recent article on the "treatment of buboes, syphilitic, chancroidal, tubercular, and traumatic, and the attempt to cure by first intention," Dr. Watson, in twenty cases, had most excellent results by excising and removing all diseased and necrotic or semi-necrotic tissue. He then curettes the under surface of skin flaps, swabs the wound thoroughly with dry sterilized gauze sponges, or sponges wetted with corrosive sublimate solution 1 to 4,000; lastly a sterilized gauze dressing is applied. He cautions against the wounding of important blood-vessels and advises the tying of all lymph ducts that have suffered division. He had no deleterious results to follow in any case, with this advantage, that he was able to discharge a patient in two weeks instead of from three weeks to two months, as when the wound is allowed to heal by granulation. In ten cases union took place by first intention; average duration sixteen days. In those healing by granulation the average duration was thirty-four days. (Genito-Urinary Diseases, February.)

While not doubting the excellence of this method and the results obtained thereby, the difficulty in private practice is to get our patients to lay up for two weeks or more. A less difficult and simpler method is that proposed by Otis, the younger, in the May number of the Journal of Cutaneous and Genito-Urinary Diseases. The usual precautions are observed in rendering the field of operation aseptic. A small incision is then made and the contents thoroughly evacuated by gentle pressure, the cavity irrigated with a 1 to 1,000 bichoride solution, and by means of an ordinary glass clap-syringe at once filled to moderate distension with warm ten-per-cent iodoform ointment. Immediately on withdrawal of syringe a compress wet in cold bichloride solution is applied, which congeals the ointment, thus sealing the cavity and preventing the escape of injection. A large dry compress of bichloride gauze is next applied, covered by a protective dressing of cotton, and this held in place by means of a firm spica. After four days, if all is well, the dressing is re-applied; but, if there be evidence of inflammatory action, the cavity is again thorougly irrigated and injection repeated. Of sixteen cases treated, nine were cured in six days, three in twelve, one in fourteen, and one in twenty-three days. Two were lost sight of. He claims these advantages for this procedure: First, that it is safe and simple; second, in suitable cases a more rapid cure than by other methods; third, that the patient is able to go about during treatment; fourth, it leaves no tell-tale scar; fifth, it in no way interferes with any other surgical procedure if such seems advisable.

In my own practice, if efforts at abortion by means of compresses fail, I incise the bubo freely, remove all diseased tissue, flush with hydrogen peroxide, full strength, until effervescence ceases. The wound cavity is then

mopped out, packed with iodoform, and over this a dry bichloride gauze dressing confined by a firm spica. In patients who lead a sedentary life the wound generally heals in from one to three weeks, with a barely perceptible scar.

As regards the treatment of syphilis, the fact there is little new argues well for the present methods adopted in its management. Mercury and the iodides, singly or combined, are as popular as ever, and deservedly so. Properly and intelligently administered there are but few cases that resist these remedies.

As regards the preparation of mercury used (The Practitioner), Hutchinson in a late article states his preference for the chalk mixture in the second stage. In ordinary cases he employs one grain of gray powder with sufficient opium to prevent diarrhea and griping. This he gives three or four times daily, according to effect, the diet being carefully regulated. The iodides, he says, are very useful in gummata and affections of the nervous system. He uses the three iodides, potassium, ammonium, and sodium together, combined with a small quantity of free ammonium, which he thinks should never be omitted. For hereditary syphilis inunctions are the most effective. A solution of bichloride in small doses is well borne by infants and children, and is usually very effective. It is not so apt to purge as the gray powder. Hebra treats his cases by the introduction of bichloride hypodermatically. One half to three fourths of a grain is injected, weekly, deep into the gluteus maximus muscle. If done aseptically abscess or ulceration never follows. I witnessed the efficacy of this method in the prompt disappearance of cutaneous lesions. I think well of the gray powder as used by Mr. Hutchinson, but prefer the proto-iodide pill, preferably that of Schieffelin & Company.

When I find anemia in the second stage I have used with excellent results this formula:

℞ Hydrag. bichlor, ... gr. ij;
Liq. ferri albuminatis (Flexner), . ʒviij.
Ft. solut. Sig: Dessertspoonful in water after meals.

We have here a palatable iron mixture which converts the bichloride into the soluble albuminate of mercury, a salt easy of assimilation. In late syphilis I substitute for the mercury potassium iodide with the iron as above, or in suitable cases the three combined.

That syphilis is fast losing its malignancy there is scarce a doubt in the minds of those who have traced the history of the disease from its earliest recognition, and I firmly believe that the future generation will see this once dreaded malady and former scourge of mankind so far divested of its terrors as to be classed along with the other exanthemata.

RECTAL DISEASES: A REPORT.

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The following report on rectal diseases is respectfully submitted for your consideration. Its object is to call your attention, as briefly as is consistent, to the most practicable and important matter that has appeared since your last meeting, and occasionally add such other material as necessity demands.

Excision of the Rectum. If we are to judge from the number of articles that have appeared in the medical press during the past year, no department of rectal surgery has received so much attention as the subject of excision for cancer. Several reasons, such as the brilliancy of the operation, the arrival of the time, and its immanent necessity, have been assigned, but its present impulse seems in a great measure due to the divergence of opinions regarding colotomy. The pro-colotomists, through their creditable researches and able discussions, have contributed much valuable information upon this surgical procedure, while the anti-colotomists can justly claim a very deserving share of the honor for drawing the lines of its indications more distinctly. Be this as it may, what concerns us most is the present status of affairs.

It seems now very generally conceded that when a cancer of the rectum is diagnosed, the operative treatment that offers the most satisfactory results resolves itself into two procedures, colotomy and excision. It should not be

understood by this that other methods have been abandoned, or yet greatly neglected; but, in case a decision is to be made by the surgeon himself, colotomy or excision should always demand his first consideration, and the earlier the better.

It must not be forgotten, however, that the operation of excision for carcinomatous disease has a very limited field of usefulness. The full extent of this has not yet been clearly marked out, but in well-selected cases much good can be accomplished by ameliorating pain, prolonging life, or even, at times, effecting a cure. Cripps very aptly says that any attempt to make excision the common treatment of cancer of this part would only bring discredit on the operation. He places the proportion of cases suitable for excision at from fifteen to twenty per cent, and in this respect agrees with most English writers, though the Germans, on the other hand, do not hesitate to subject to these radical measures about seventy-five per cent. It is therefore easily understood why the statistics are not lacking in figures that show a marked difference in the prognosis given by these two classes.

The methods employed number about twenty, but they represent only three general classes; they are the perineal, the sacral, and the combined perineal and sacral. The perineal is employed mostly for growths about the anus. The sacral is the most useful when a circumscribed growth is present too high for the perineal plan and too low for laparotomy. It possesses the advantages of giving better access to the parts, sometimes preserves the sphincters and admits of manipulation under the supervision of sight as well as touch. The combined method makes it "possible to either resect long pieces of rectum or to amputate long portions which would have been" otherwise "inoperable on account of their distance from the perineum." It offers

the advantages of attacking the growth from below, gives the greatest amount of working space, and enables the operator to reach the highest point in the pelvic cavity. Goodsall reports a case in which the operation was preceded fourteen days by an inguinal colotomy. After this a cancerous mass, extending four inches up, was successfully excised. Attention is called to this as an illustration of the fact that a preliminary colotomy is held by some authorities as an important factor in the procedure, and indispensable to the welfare of the patient.

Of those cases in which an operation is indicated, Cripps holds that the offending mass must be freely movable in all directions, and there should always be a chance of completely removing the diseased structures. He points out that the most promising ones are those which resemble an ulcer, are limited to one side of the gut, have the upper border well defined, and healthy mucous membrane beyond the growth that can be felt. Treves opposes the procedure when the peritoneum is opened or portions of the bladder, vagina, and prostate are removed, while Allingham looks with disfavor upon attacking the growth four inches from the anal orifice. These three writers may be said to agree in the main, and probably voice the opinion of most English surgeons. Kelsey substantially subscribes to these views, acknowledges the possibility of excising as much as six inches of the rectum, but doubts the advisability. McCosh, Lange, Kammerer, Gaston, and others, who favor the German ideas, go higher and open the peritoneal cavity with greater impunity. The former reports five cases in which from three to ten inches were removed successfully, while the latter gives one case where the entire rectum was excised, but with a fatal result. Kelsey maintains that a large proportion of cases still remain on undetermined ground.

According to McCosh, out of 439 cases carefully selected and operated upon by Kelsey, Cripps, Billroth, Czerny, Rehn, and others, including fifteen recorded surgeons, 84, or 19.1 per cent, deaths were attributable to the procedure. This gives a mortality that is palpably still very high, notwithstanding the fact that these cases were treated under the best hygienic surroundings and with the most modern improvements in scientific surgery.

In the matter of prognosis, Kocher, Bardenheuer, Konig, Hildebrand, Czerny, Kronlein, V. Wahl, Von Bergmann, Genzmer, and Cripps give an aggregate of 375 cases. Considering an immunity from the disease for four years a cure, they report 32, or a little more than 8.5 per cent, cures. McCosh claims, however, that as it has not yet been four years since some of these cases were operated upon, this percentage can reasonably be increased to about 11.

From these figures one almost irresistibly reverts to the work of Paget on Pathology, in which he says that in many phases of cancer it is even yet a question whether or not operations prolong life.

External Hemorrhoids. Operative Treatment. In the matter of local treatment of external piles, Deaver, of Philadelphia, lays little stress on the accomplishment of a cure by palliative methods, and advises the three following operations: Incision for the thrombotic variety, dilatation of the sphincters or clamp and cautery for varicosis with proliferation, and in the variety made up wholly of hypertrophied tissue, unless it be a mere tab, the latter operation should be employed.

It need scarcely be said that the weight of authority will not bear him out in all that he says. Assuming that an operation has been consented to, probably few will differ from the plan of dealing with the thrombus, nor yet with dilatation in some cases where fissure or sphincteric con-

traction is present, but when the clamp and cautery are applied to varicosis with proliferation there will be many dissenting voices. These will be not only among the advocates of this operation for internal piles, but also from almost all disciples of the ligature and other procedures. This class of cases, being usually very simple, scarcely ever justifies radical surgical measures, unless indeed it be a complication of internal hemorrhoids or fissure. Uncomplicated conditions demanding operation here are considered usually to require only such procedures as galvanism, the ordinary cautery point, or possibly the ligature. Allingham, Cripps, and others hold that careful clipping away of the redundant tissue with the scissors will suffice in hypertrophies. Kelsey maintains that it is not best to perform the operation when the parts are acutely inflamed, as there will be more pain and the recovery less rapid. He admits, however, when necessity requires it, that nothing is gained by waiting. It is now pretty generally accepted that necessity nearly always requires it, and the better rule would therefore be to excise the tumor at once. The pain, though more intense at the time of the operation, is less extended, and the belief that the convalescence is of shorter duration is still quite current among rectal surgeons.

Internal Hemorrhoids. Medical Treatment. Remarkably few plans of medical treatment have been brought forward since your last session, and of these only one needs even passing notice. It has been suggested by Keith MacDonald, of Great Britain. The agent used consists of Kosobudki's modification of Unna's suppository. It is composed of chrysarobin 1 grain, iodoform ¼ grain, extract of belladonna ⅛ grain, with cocoa butter 30 grains, and glycerine in sufficient quantity for consistency. During treatment the patient is to avoid much exertion, keep the bowels well open, and introduce one suppository into the rectum each

day. In the course of a fortnight the hemorrhoids slough away, and the patient is dismissed as soon as the wounds have sufficiently repaired. It should be said of this treatment, which represents a plan more generally practiced than is supposed, that it is as empirical as it is uncertain, and the less it is employed the better it will be both for physician and patient. There is always danger of extensive inflammation, sloughing, ulceration, or bleeding. In a well-marked case of internal hemorrhoids no radical cure can be effected unless the pathological condition be removed. The treatment can bring about such a result only through unlimitable sloughing; therefore its curative effect must necessarily involve an element of danger.

Operative Treatment. The subject of the use of the ligature and the clamp and cautery in the treatment of internal piles still continues a topic of discussion among many of the leading rectal men of America and Europe. The advocates of each, by facts and figures based on experience and the common disadvantages, show excellent results and claim precedence for the operation of their choice. The statistics of each, in the hands of experts, show about the same figures, and that they are both practically safe (as to life) when the operator is duly careful.

The generally admitted disadvantages that are common to both may be mentioned as follows: hemorrhage, abscesses, sloughing, pyemia, erysipelas, tetanus, and the misfortunes of attendant pain, delayed healing, subsequent ulceration, fistulæ, and anal contraction. It is on these points mainly that the comparative merits of each have been discussed, but throughout the various controversies the ligature seems to have lost none of its popularity, and to-day the preponderance of authority singles it out as an operation *par excellence* for general use. Treves says of it, that personally he would share the opinion, shared by

many, that the ligature offers on the whole the best means of dealing with internal piles. Allingham reports 1,600 consecutive cases operated on by him without a single death, and finds the clamp and cautery "four times as fatal as any other method."

While at St. Mark's Hospital, London, with the exception of but three cases, I saw no other operation than the ligature for internal hemorrhoids, and the results obtained were uniformly satisfactory.

Aside from statistics and the deductions usually drawn in standard text-books, there seem to be one or two practical points that may be mentioned in favor of the ligature.

Regarding instruments, the practical physician who would use the clamp and cautery must provide himself with costly paraphernalia which he will seldom find occasion to use. The operation with the ligature, on the other hand, can be performed with a scalpel or pair of scissors, a tenaculum, artery clips, and a good stout silk or flax ligature, all of which may be found in any ordinary pocket case.

The use of the ligature requires much less dexterity, skill, and experience for its application, and is therefore a much simpler method.

Should recurrent hemorrhage occur inside the anus, the ligature will serve at once as a guide to the bleeding point, which may be either caught up with an artery clip or possibly controlled by tightening the ligature already present. Should it become necessary to use a speculum, the dangers of tearing the tissues and exposing the mouths of the vessels are greater when the clamp and cautery have been used.

It will also be found that there is generally an aversion to the use of the cautery on these parts, when the nature of the operation is explained to the patient. Many people will submit to the ligature who will vigorously oppose the other method.

In the preceding statements it must not be understood that the clamp and cautery are to be condemned as useless, nor yet that they are inferior to the ligature in every respect, but for the general run of cases, and in the hands of the general practitioner, the ligature offers under most circumstances a simpler and better means of dealing with this class of maladies.

Pain Following Operation. Treves calls attention to the fact that pain following the operation for hemorrhoids is attributable to spasmodic contraction of the sphincters or levator ani, an intercurrent inflammation, or inclosure of the skin, in case a ligature has been employed. For its relief he believes morphia and opium suppositories of doubtful benefit, since it is questionable whether enough of the drug is absorbed to produce any salutary effect. It may be further added that some suppositories, instead of being absorbed, remain solid and become an irritating substance to the adjacent wounded tissues. Local applications of hot water by means of a sponge, as advised by Henry Smith, of London, and administration of the agent hypodermatically or by the mouth will usually prove more effectual.

Colotomy. Inguinal versus Lumbar Colotomy. Mathews states that the preference for inguinal colotomy has been given such prominence by recent writers as to make the matter seem one-sided when compared with the lumbar method.

He brings forward a paper in answer to some of the generally accepted advantages of the former method, and believes that "the inguinal operation has not and should not supplant the lumbar operation as a surgical procedure."

The points taken are substantially as follows:

1. That the inguinal method being easier should be no argument in its favor, for it is in reality sometimes more

difficult. The surgeon should be prepared to do either, and not advance such premises to palliate his inability.

2. That in the majority of inguinal cases the small intestine presents itself first. This often necessitates a prolonged and difficult search in the peritoneal cavity for the colon.

3. That the open peritoneum in the inguinal or intra-peritoneal procedure must invite dangers not attendant to the lumbar or extra-peritoneal (Bryant's 170 cases being cited as evidence) operation. The dangers are made greater when a prolonged search for the bowel is requisite. The recent adoption of antiseptic surgery in no way weakens the force of this proposition, as it can be better practiced in lumbar colotomy.

4. That the short inguinal incision, in his experience, frequently has to be lengthened to the extent of admitting two fingers, to make it possible to procure and handle the bowel. And in bringing the bowel to the surface there is danger of twisting it.

5. That he has never been compelled to resort to insufflation, as pointed out by some writers, to find the gut in the lumbar region.

6. That where the colon is distended, or there is a bound down or contracted mesentery, or carcinomatous disease involves the lower colon, the inguinal method would have to be abandoned.

Finally, he adds, "To the lumbar operation none of these objections can be preferred, and I must maintain that they outweigh any and all of the objections that have been preferred against it."

Complication of the Operation. Probably the most important fact that has been brought forward recently in connection with colotomy is what Kelsey terms evisceration. He reports two cases observed in three years, and

claims that they are the only ones on record. It consists of a protrusion of the intestine through the abdominal incision, and takes place usually within twenty-four hours after the first dressing has been applied. The onset is sudden and marked by a profuse exudation of serum which quickly saturates the dressing. The cause was attributed to diminishing the number of stitches used in the operation from about fourteen to six, and its prevention likewise suggested, thus suturing the parts more carefully and firmly. I might also add here that a good firm pad and steady manual pressure over the parts during the subsequent coughing and vomiting will do much to obviate this untimely accident.

In the matter of treatment he advises that the adhesions to the dressing be gently separated, the impaired circulation revived, the protruded colon returned to the abdominal cavity and kept in place by a reinforcement of sutures and a well-applied dressing. While the lack of reports point to the infrequency of this complication, its occurrence in these two cases is quite sufficient to impress upon us its dangers and the necessity of always employing such measures as will anticipate and prevent it.

Restoration of the Rectal Function. After a colotomy has been performed and it becomes desirable to re-establish the flow of feces in its normal channel, the following method has been suggested by Banks, of Liverpool: Select a substantial piece of soft rubber tubing about six or eight inches long, tie a stout ligature firmly about its center, and introduce it into the artificial anus in such a way as to have about half of its length on either side of the abdominal opening, where the bowel is acutely bent. The ligature may be made fast to the dressings or, by making it sufficiently long, can be carried around the waist and tied.

In this manner placed, the tube tends to return to a straightened position, and in doing so produces a similar effect upon the bowel. The greatest pressure is therefore exerted upon the spur, and in consequence causes it to melt away more or less by atrophy, absorption, or ulceration. This process is simple, practicable, unattended by any great amount of risk, and in the hands of Mr. Banks has brought forth very good results. When it is remembered that the use of ligatures, clamps, caustics, or incisions may give rise to a fatal peritonitis in this operation, and that not time so much as safety is the great purpose, this method should always deserve, indeed demand, our first and most careful consideration.

Fistula. Fistula with Phthisis. From an article recently published on the "Relations of Pulmonary Phthisis to Rectal Fistula," Strauss, of St. Louis, draws several deductions, which are substantially as follows:

In selected cases of fistula in phthisical persons it is safe and the surgeon's duty to operate. The results are very satisfactory, since by curing the local manifestation, with its additional drain on the system, improvement in the general health quickly follows. He thinks that opposition to operation is the outcome of an improper understanding of the etiology and pathology of this disease. There is probably no surgeon who has given this subject more careful attention nor pointed out the relationship of the two conditions more clearly than Allingham. He holds that the subject from an operative standpoint should be considered as taking the three following forms:

1. "Fistula with acute tuberculosis." The patients so affected are "acutely tubercular, and can not live long."

2. "Fistula with chronic phthisis." In this form those affected "have had hemoptysis, and may at the time of consultation have the remains of a cavity or consolidation

at the apex of the lung without any very active symptoms of phthisis."

3. "Fistula with a family tendency to phthisis." These cases are considered as synonymous with strumous disease in other portions of the body.

In operating on the first variety he advises that the external opening be simply enlarged, using an anesthetic if necessary, the object being to establish free drainage and give relief from the pain. In the second class the object to be accomplished is a cure. The procedure consists in laying open the principal tracks, cutting off all superfluous flaps, and scraping the sinuses with a curette. Care should be taken here, as in both the other varieties, to "interfere as little as possible with the sphincters" ("especially the internal"), and to reduce the loss of blood to a minimum. In the third variety the plan of procedure differs in no respect from that usually followed in the ordinary form of fistula, of course bearing in mind the injunction regarding the sphincters.

It is of signal importance not to confine the patient to bed any longer than necessity requires, and always to select good weather for the operation.

When constant cough is present, unless it can be controlled, an operation for cure should not be advised, for the reason that the continuous motion caused by it prevents the proper healing of the parts.

OTOLOGY: A REPORT.

By T. C. Evans, M. D.
Louisville, Ky.

To make an intelligent and satisfactory report on the progress of Otology, impartially reviewing the literature of the entire field, giving to each author due credit and to each operation or therapeutic measure its proper place in the scale of importance, discriminating between what is original and what is repetition, without prejudice or favor, and still confining the report within bounds commensurate with the time and patience of a body composed almost wholly of general practitioners, would indeed be a difficult task. I shall, therefore, beg leave to confine my report to a single feature of the subject, that of intra-tympanic surgery. This embraces the various operations devised and employed for the relief of impaired hearing, for the relief of tinnitus, for cure of chronic discharges from the ear which have resisted treatment by non-surgical means.

During the year valuable and exhaustive articles on this subject have been contributed by Blake, Dench, Jack, Richardson, Randall, Wurdemann, and others. Removal of the Stapes (Clarence J. Blake, Archives of Otology, Vol. XXII, No. 1): Blake advocates the use of cocaine in middle-ear operations, in view of the fact that it affords an opportunity for diagnosis by elimination; that it permits the performance of the preliminary incision of the membrana tympani and the subsequent operations, including

stapedectomy, without general anesthesia; that in chronic middle-ear disease changes seriously impairing the transmission of sound may occur in one part or another of the ossicular chain, the articulations, the fenestral attachment of the stapes, the membrane of the round window, and escape detection except upon subjection to such direct inspection and test of hearing power and of the patient's subjective symptoms as an operation upon the middle ear under conditions of consciousness and freedom from pain would afford. In describing the operation for the removal of the stapes, Dr. Blake says: "From three to five minutes before the operation a few drops of ten-per-cent solution of cocaine are forced into the eustachian tube through the catheter; the patient is seated erect in a high-back chair, his head being held firmly by an assistant. With the patient's head erect it is much more easy for the operator to determine the relative position of the parts of the middle ear exposed by the operation and the angle of attachment of the stapes, a very variable one and of importance from an operative point of view, and that the position of the head can be adjusted at command as the operation proceeds. The incision of the membrana tympani should be made with the paracentesis needle; the cut which I prefer is the one which I have heretofore used for the mobilization of the stapes, and is a modification of that of Miot, but is an incision merely and not an excision of the membrane, and begins at a point midway between the short process and the tip of the long process of the malleus, and close to the manubrium, then extends upward along the posterior ligament of the short process, and follows the periphery to a point posteriorly on a line with the tip of the manubrium, the result being the formation of a flap which falls downward and outward, leaving an unencumbered opening with free access to the subsequent

field of operation; bleeding is stilled by a sterilized solution of cocaine; the hearing is tested if desirable, and the operation continued; the next step being the division of the tendon of the stapedius by means of a paracentesis needle, or if the stapes is situated forward and in full view, the division of the incudo-stapedial articulation, which is done with a small triangular knife, a large angular knife being subsequently passed behind the incus to insure separation. An examination of the stapes by means of probe and blunt hook and a repetition of the hearing test help to determine at this stage of the proceedings whether the stapes shall be mobilized or extracted. In the latter instance the stapes should be first mobilized and then extracted. The best instrument for this purpose is a slender, blunt hook, curved very slightly backward, which is passed behind the head and between the crura from below upward. The resistance offered to the traction hook varies considerably. When the stapes comes away entire, there is a sense of contact resistance followed by a sense of suction. When the crura breaks, leaving the foot plate in position, the contact resistance alone is felt. At the moment of removal of the stapes there is a decided change in the character and rate of pulse; vertigo is not necessarily present, but should always be regarded as a contingency. After the operation the ear should be tightly stopped with sterilized cotton, and the patient kept quiet two or more days.

Operative Measures for the Relief of Chronic Suppurative and Non-suppurative Inflammation of the Tympanum, and the Indication for the Employment of such Measures and the Results Obtained. (E. B. Dench, New York Eye and Ear Infirmary Reports, Vol. 1, Part 1.) Dr. Dench emphasizes the importance of differentiating between nerve lesions and lesions within the middle ear before an operation is advised. On this point he says: "An ear may

have been the seat of a suppurative process, as a result of which the membrana tympani may have been almost completely destroyed, and the ossicles bound together. Impaired hearing and tinnitus in such cases might depend on this condition, or it might depend on nerve lesion. A careful determination of the lesion should be made in every case. A series of tuning forks of different pitch furnishes the means. In determining the advisability of operative interference for the improvement of hearing, application is made of the well-known fact that in lesions of the conducting mechanism the normal relation between air and bone conduction is reversed."

In describing his method of operating Dr. Dench says: A general anesthetic is always necessary for the perform- of any intra-tympanic operation. Except in division of adhesions where the membrana tympani has been previously destroyed, the ear should be douched with bichoride 1 to 5,000. I always operate with the head and shoulders elevated, supported on a rest which admits of motion in all directions. Straps prevent the patient from sliding down. When the membrana is in tact an incision is made on the posterior superior quadrant, beginning just below the membrana flaccidi, following the course of the insertion of the membrane and of sufficient extent to bring the incudo-stapedial articulation into view. If a single incision does not accomplish this, a horizontal incision may be made from the upper extremity of the first, allowing a triangular flap of drum membrane to be turned down. By cautious manipulation with a fine probe the head of the stapes may usually be brought into view. The tendon of the stapedius should not be divided in the first incision, then the incudo-stapedial articulation will be more plainly seen. Disarticulation is now effected by a triangular knife being passed in front of the long process of the incus, with

the point directed backward and pressed downward through the articulation. With the fine probe the mobility of the stapes is now determined. A horizontal incision is next made at the lowest point of attachment of the membrana tympani, with a blunt knife the membrane is divided close to the tympanic ring from below upward anteriorly and then posteriorly to just above the short process. That portion of the membrana flaccidi above the short process is next divided by the knife being plunged upward and inward above the short process, dividing the ligaments which hold the malleus and the remains of the membrana tympani. Usually the short process of the malleus can be distinctly seen, and it only remains to grasp it with forceps and pressing first inward and then downward and finally by traction outward this bone with the attached membrani is removed. The next step is the removal of the incus. The ossicle can usually be brought into view by the incus hook. These hooks are curved in opposite directions for the right and left ears. The long process of the incus is siezed and by gentle traction downward and outward easily removed; the stapes, if rigid, should be rendered movable by incisions and pressure. If advisable the ossicle may be extracted by means of a blunt hook passed between the crura. After the operation a strip of antiseptic gauze is carried to the bottom of the cavity and the canal tightly packed. This method of operating must be modified where the destruction of the membrana tympani has already taken place. The increased vascularity renders the hemorrhage more profuse, thus hiding the deeper structures from view early in the operation. It is advisable to free the stapes early from the surrounding structures before the vascular parts are divided. My own cases at the hospital include twenty-four of chronic suppurative otitis media. In fourteen the discharge was stopped, in eight much reduced,

with two recent cases still under treatment. In fourteen the hearing was improved, in nine it remains the same, in one it was apparently reduced. Nine operations have been performed on seven patients in which the membrana tympani was in tact. The hearing was greatly improved in four, slightly improved in four, unimproved in one. From what has been shown in the preceeding pages, it seems to me that there can be no question that surgical procedures upon the middle ear enable us to benefit a large number of patients who would otherwise be unrelieved.

"Remarkable Improvement in Hearing by Removal of the Stapes." (F. T. Jack, Trans-American Otological Society, 1892.) Dr. Jack advocates removal of the stapes without the malleus, incus, and drum membrane in cases of deafness from non-suppurative catarrh of the middle ear. He says not only is the simple removal of the stapes much better in its results, but on the grounds of conservative surgery much to be preferred. It produces the greatest improvement in hearing, with no inflammatory reaction or bad results. The operation is as follows: The first step is to make a cut in shape like an inverted Λ just over the incudo-stapedial joint, allowing the flap to fall forward. This gives a clear view of the articulation. Next separate the stapedius muscle from the head of the stapes; this is done by passing a very slender knife behind the head of the bone. This muscle must be completely severed, otherwise when the stapes is loosened the muscle will pull its head out of sight and cause much trouble in its subsequent removal. Having cut the muscle, the articulation with long process of the incus is then severed by passing through the joint from behind forward a small triangular knife. If not perfectly loose it can be made so by passing a small pointed knife around the head; a small loop now introduced behind the head will with gentle traction

remove the stapes. It has seldom been necessary to use cocaine to prevent bleeding. The patients usually remain quiet in bed for two or three days with the ear plugged with cotton.

After reporting in detail sixteen cases, Dr. Jack says, while recognizing the possibility of error in all human calculations, the results obtained in the cases reported are of such a nature as to lead me to be very hopeful of the future of the operation. In general the cases show little tendency to inflammatory reaction. The effect of the operation on the hearing as tested by the watch was not marked either way; in some cases a slight gain, in others a slight loss. The test with Konig's rod met with similar results. The one result of this operation which gives it importance and has led me to make this report is the very marked improvement in hearing the human voice. If persons who have heretofore heard only with difficulty can be made now to hear with ease by treatment unattended with danger, the operation is certainly worth considering. As to the reason this effect is accomplished by the operation, I have no theory to offer other than the simple supposition that it is by the removal of mechanical obstruction to the sound waves.

The Operation for the Excision of the Ossicula in Chronic Aural Catarrh, with Instance of Failure. (Dr. H. V. Wurdemann, in the Journal of the American Medical Association, October 22, 1992.) Dr. Wurdemann says: "Before taking up the subject-matter of my paper I would like it to be distinctly understood that I intend casting no aspersions upon aural operative procedures. I have had marked success both previous to and since the one disastrous result which forms the nucleus of this paper. I can discover but little mention of accidents occurring during or after the operation, and these have all been in suppura-

tive cases. I can find in only three instances the admission of but two operators of unfavorable reports upon hearing. I have excised the ossicles in eleven cases; four of these have been for non-suppurative inflammation. In only one instance has suppuration followed. One year ago a strong, healthy man, aged sixty, consulted me about his ears. He complained of deafness, noise in the head, and vertigo, for which he sought relief. I treated the middle ear of both sides with catheter, using camphor-iodin and camphor-menthol vapor for three weeks with absolutely no improvement of hearing on either side. Despairing of improvement by other means I suggested an operation. I removed the membrana tympani under ether anesthesia. The operation was clean; although several attempts were made to reach the incus, it was not obtained. There was excessive vomiting after recovery; he complained greatly of vertigo. On testing his hearing on the evening of the second day I was surprised to find he was totally deaf on the operated side. No reaction followed until five days later; he had pain at night, and the next morning an acute otitis media set up, which ran its course in two weeks." Dr. Wurdemann thinks the lesion due to hemorrhage into the labyrinth during the ether anesthesia, or during the excessive vomiting thereafter, with subsequent organization of the clot.

A Case of Operation for Catarrhal Deafness. (B. A. Randall, American Otological Society, 1892.) Dr. Randall reported a case of excision of the drum membrane and malleus for catarrhal deafness, followed by suppuration, mastoid empyema, and burrowing abscess of the neck. There was oculo-motor paresis, diplopia, and some mental aberration, suggestive of inter-cranial abscess. A good recovery was ultimately made, but at no time was there any improvement in the hearing. Dr. Randall thinks probably the trouble was caused by the incus being dis-

placed upward, clogging the exit of the antrum and inducing the empyema. The concensus of opinion of a number of competent conservative operators who have contributed the results of their labors in this field during the past year is that in the chronic suppurative and non-suppurative diseases of the middle ear, uncomplicated by lesions of the auditory nerve, this procedure is not only justifiable but advisable. In suppurative cases the discharge is always diminished and generally entirely cured. The hearing is in the majority of cases markedly improved, especially for the voice. The results on the tinnitus are more variable; in some it is entirely relieved, in others apparently unchanged. There is but slight tendency to inflammatory reaction, with but little danger of further impairment of the hearing.

Altogether it seems that intra-tympanic surgery offers, with a considerable degree of certainty, a reasonable amount of relief to a very large and exceedingly unfortunate class of cases who have heretofore been considered out of the pale of medical assistance.

DISCUSSION.

DR. S. G. DABNEY: I wish to speak, not in regard to the treatment, but in regard to the diagnosis of cases of middle-ear disease that are likely to be benefited by operation. There are two points worthy of attention; one is that patients who have extreme disease of the middle ear are apt to hear better when there is a loud noise; the other is that the tuning fork C, which is the one generally used, is heard better when pressed upon the bone back of the ear than at the meatus externus. Practitioners who are in doubt as to whether cases are fit for operation should observe these two points. If a patient hears better in a quiet place, most likely the nerve of hearing is affected, otherwise the middle ear is affected; bone conduction is better when the middle ear is the seat of disease, and aerial better when the disease involves the labyrinth.

CASES IN ABDOMINAL SURGERY, WITH REMARKS.

By David Barrow, M. D.
Lexington, Ky.

Case 1. L. M., aged twenty-four, single, was first seen in October. Her health had been poor for eighteen months; she looked sick, was quite thin, with an anxious facial expresssion, and had had frequent attacks of intense suffering, attended usually with slight fever. Examination revealed a fluctuating tumor in the abdomen. November 5th I operated at the Protestant Infirmary, assisted by Drs. Kinnaird and Moore. The tumor was multilocular and generally adherent, some of the adhesions being very firm. A cyst was ruptured, and much of the contents escaped into the peritoneal cavity. The other ovary seemed healthy and was not removed, as the patient had requested that one ovary be saved if possible. Irrigation was copious and drainage employed. Duration of the operation forty minutes.

The drainage-tube was removed on the third day. Convalescence was uneventful, and the patient is now well and has since married.

Case 2. P. H. S., aged twenty, was seen with Drs. Aultz and Heath, of Richmond, Ky., in May. About eight months before she had married, and two months after marriage had been taken sick, being confined to bed most of the time during the six months previous to my visit. Her suffering had been severe and her condition was extreme.

There was a large abdominal tumor, irregular and nodular, part of it seemingly solid, and over the rest there was indistinct fluctuation. Examination *per vaginam* being painful an anesthetic was given. The tumor extended deep into the pelvis, and it was difficult to insert the finger into the vagina or rectum; the rectum was pushed down and the sphincter dilated, presenting the same appearance as when the fetal head is distending the perineum. Through the vagina the irregular, and at some points fluctuating, tumor could be felt. After a most careful and thorough examination we felt uncertain as to the nature of the tumor, but thought it probably an extra-ligamentary ovarian tumor, and advised operation. She was taken to the Protestant Infirmary at Lexington a few days later, and on June 2d I operated, assisted by Drs. Kinnaird and Moore. On opening the abdomen I encountered dense adhesions, and a good deal of force had to be used in separating them; the tumor was almost solid and contained throughout many small cysts, with viscid, mucoid contents, also several pieces of bone, long strands of hair, and sebaceous material. The tumor was traced to a pedicle on the right, and tied off, weighing about twelve pounds. Her condition becoming alarming, and it being evident that she was about to die on the table, I irrigated with very hot water, inserted a drainage-tube and closed the abdomen, leaving the pelvis filled by a tumor. The patient was put to bed profoundly shocked, but under proper treatment reacted slowly. She was out of bed in four weeks and seemed better than she had been before the operation. At the end of the second month her condition had improved a good deal, so I concluded to remove the tumor that had been left.

On August 2d I reopened the abdomen; the tumor completely filled the pelvis, and it was impossible to differentiate any of the pelvic structures. Beginning posteriorly

I separated the adhesions, and after hard work succeeded in freeing the tumor from the large and small bowel, uterus, and bladder; it was very much like the first one removed, almost solid, but contained neither bone nor hair. The tissues were very much lacerated and the serous coat of the small intestine was stripped off in several places. The abdomen was irrigated, a drainage-tube inserted, and the incision closed. The tumor weighed about five pounds. When put to bed she was greatly shocked, but reacted fairly well. She seemed to do well for several days, but on the seventh day died from gangrene of the bowel, due no doubt to the injury done in removing the tumor.

CASE 3. K. B., negro woman, aged twenty-three, married, was first seen in consultation with Dr. M. B. Robinson. She was greatly emaciated and had a haggard and distressed appearance. Ten months before she had discovered a tumor in the lower part of the abdomen, but supposed she was pregnant, although at times her suffering was great. The growth of the tumor had been slow, but when I examined her it extended above the umbilicus. At no time had she been confined to bed. Early in January she went to the Protestant Infirmary, and although the temperature was frequently taken it was never found above 99°. On January 17th, assisted by Drs. Kinnaird and Moore, I operated. The tumor was adherent to the abdominal wall, the intestines, and bladder; the sac was friable and ruptured during the enucleation, flooding the peritoneal cavity with horribly offensive pus. Several gallons of water were used in irrigation; a glass tube was inserted, and the abdomen closed. Duration of operation thirty-five minutes. The patient when put on the table had a very rapid, weak pulse, and her condition in every way was most unfavorable. At the end of the operation she was profoundly shocked and the radial pulse could not be felt.

For a week her condition was desperate, and during that time hypodermics of digitalis and strychnine were regularly given, and occasionally a hypodermic of morphine. After a week the improvement was slow, but progressive, and at this time she is fat and well.

CASE 4. J. W., aged thirty-four, married, was seen with Dr. Coleman in October. She had a large uterine tumor that was causing great suffering, and came to me to have it removed. Two years before she consulted me the abdomen had been opened and the tubes and ovaries removed, but the tumor continued to grow and she frequently bled profusely. The pressure symptoms were marked, and she often had paroxysms of intense pain. On November 14th, at the Protestant Infirmary, assisted by Drs. Kinnaird, Moore, and Scott, I did an abdominal hysterectomy. The adhesions from the previous operation were exceedingly firm, and some of them had to be divided with scissors; the tumor was amputated above the vaginal attachment, and the pedicle was treated extra-peritoneally. The duration of the operation was forty-five minutes, and the patient was put to bed in excellent condition. The pedicle came away on the fifteenth day. Convalescence was smooth and uneventful, and the patient returned home at the end of the fourth week. The tumor weighed twenty pounds.

CASE 5. D. J. C., male, aged fifty, was seen with Dr. Molloy on January 1st. He had been sick one day and was suffering very much when I saw him. We diagnosed intestinal obstruction and resorted to the usual treatment. Failing to relieve him, I operated at his home on the night of the 2d, assisted by Drs. Molloy and Kinnaird. The obstruction was due to a fecal concretion, completely occluding the ileum. The bowel was incised, the obstruction removed, and the incision closed by the Czerny-Lembert suture. The abdomen was closed and the patient put

to bed in excellent condition. Duration of the operation thirty minutes. There was no vomiting after the operation, and the bowels moved the next day. Convalescence was rapid and uneventful, and the patient is now well and attending to business.

CASE 6. B. D., aged twenty-eight, single, was seen with Dr. Rhodes. For several years she had been an invalid, and during the past six months had been confined to bed. Five years before a submucous uterine fibroid had been removed. She stated that she had suffered a great deal at the time of the operation and had been slow in regaining her health. She was hysterical and very despondent. On digital examination the ovaries were felt enlarged and fixed; the uterus was retroverted, and during manipulation her suffering seemed intense. She was taken to the Protestant Infirmary, and on May 15th I opened the abdomen, assisted by Drs. Kinnaird, Moore, and Rhodes. The ovaries were found enlarged and indurated, but the adhesions were slight. The tubes and ovaries were removed and the abdomen closed. The patient did well and left the infirmary at the end of the month. Her condition has improved very much, but some of her nervous symptoms continue, and at times she is despondent.

CASE 7. S. S., aged twenty-five, married, consulted me in October. She was extremely nervous and her general health was much impaired. Two years before she had given birth to a child and had been in bad health ever since, and for several months had been confined to bed. A badly lacerated cervix was the only abnormal condition that I found, so I was inclined to think it had much to do with the shattered nervous system. She went to the Protestant Infirmary, the cervix was repaired, she was put on milk diet and kept in bed for six weeks, but without benefit. Symptoms of intestinal obstruction developed and

there was much tenderness and pain in the abdomen. Several times I had much difficulty in moving the bowels, it being necessary to use repeated high injections of salts and glycerine. The obstructive symptoms continuing, I decided to do an exploratory operation, so on December 12th I operated, assisted by Drs. Kinnaird and Moore. The viscera were examined, but nothing could I find to account for the obstructive symptoms. At the splenic flexure of the colon there were some slight adhesions; these were broken up, but I did not think them the cause of the trouble. After the operation she seemed better for a while, and returned to her home in Versailles in about six weeks. A letter from the patient received recently states that she is still confined to bed, suffers a great deal, and is extremely nervous, but has fattened and looks as well as she ever did. The operations have done her no good, and I now feel sure that the nervous system alone is at fault, and I believe responsible for her condition, and that the abdomen should not have been opened.

CASE 8. A. R. G., aged thirty-two, was referred to me by Dr. Taylor, of Richmond, Ky. She had two children, one fourteen and the other twelve years old. She had never been pregnant since the birth of the last child, and dates her bad health from that time. She referred the pain to the lower part of the abdomen, was quite nervous, and had to stay in bed much of the time; had not menstruated for six months, and for several years the flow had been scanty and of only a day's duration. Examination revealed the uterus fixed, the adhesions seeming greater on the left than on the right side. On February 14th I operated at the Protestant Infirmary, assisted by Drs. Kinnaird and Moore. Both tubes and ovaries were embedded in adhesions, and it took some time to remove them. On the left the ovary was not larger than a pea, on the right not more

than half its normal size, and the tube was distended with clear fluid. Duration of operation one hour, and the patient's condition was excellent when put to bed. The drainage-tube was removed on the second day. Convalescence was smooth, and the patient went home at the end of the third week. In a letter recently received she says: "I am still improving and doing as well as I possibly can; do not suffer any pain, and my appetite is good. I do hope that my health will be better than ever before, and I feel that it will."

CASE 9. A. B., aged thirty-four, married twelve years, was referred to me by Dr. S. L. Helm, of Spears, Ky. She had been a sufferer since the birth of her only child, now ten years old. On examination the cervix was found lacerated, and to the left of the uterus there was an exudate. The patient was quite nervous and seemed to suffer greatly during the examination. She had had local treatment frequently, but had not been benefited. Menstruation was regular, but never lasted more than one day, and frequently there was barely a show. Dr. Helm had told her that an operation was necessary, and she was anxious that something radical be done. On March 28th I operated, assisted by Drs. Kinnaird, Moore, and Helm, at the Protestant Infirmary. On the left there were a good many adhesions, and it took quite a while to remove the tube and ovary; on the right the adhesions were slight, but I thought it best to remove the tube and ovary also. The ovaries were quite small, not more than one third their normal size. The convalescence was smooth, and she returned to her home in one month, free from pain and apparently well.

CASE 10. L. C., aged twenty-three, married four months, was seen at the Protestant Infirmary with Dr. J. C. Carrick on March 16th. She was from Ashland, Ky., and had come to Lexington for treatment. On November 12th she had

married, and on the 13th menstruated, the period lasting four days. December 13th she again menstruated. On December 23d she fell on the pavement and was caught under a gate and the abdomen very much wrenched. Since the fall she has suffered, being in bed a good part of the time. On January 13th she menstruated, the period lasting only two days, and some clots were passed. The next period was February 23d, the flow lasting from that time until about March 7th; some clots of blood and what seemed to be little particles of membrane were passed. For a week she had had daily paroxysms of pain in the lower part of the abdomen, so severe as to require morphine. There was no nausea or other sign of pregnancy. On examination the uterus was found a little enlarged, looking forward and slightly fixed; to the left was a mass firmly fixed and about the size of a walnut. On the right there seemed to be some unnatural fullness, but nothing definite could be made out. During the examination there was a quantity of bloody discharge from the uterus, containing decidua. I thought it probable that the case was one of ectopic gestation. On the 18th I made another examination, and, believing more firmly that my diagnosis was correct, advised operation. On the 21st I opened the abdomen, assisted by Drs. Kinnaird, Moore, and Carrick. On the left was quite a mass firmly adherent to the sigmoid and omentum. In enucleating the sac, about the size of a walnut, it ruptured, and its contents escaped. After much difficulty I succeeded in removing the sac, which was the left tube; the omentum being torn in freeing it from the mass was ligatured and cut off. On the right an ovarian cyst, about the size of an orange, was found and removed. The cavity was irrigated and a glass drainage-tube inserted. Duration of operation one hour. The patient took ether badly and came near dying on the table. She was put to

bed with a pulse of 120, and considerably shocked, but reacted fairly well. In emptying the drainage-tube, ten hours after the operation, the fetus was caught in the nozzle of the syringe and removed. It was not more than two thirds of an inch long, but could be positively made out as being a fetus, and was, I judge, in the sixth week of development. Convalescence was uninterrupted, and the patient is now well.

CASE 11. R. M., aged forty-four, married, was first seen by Dr. Skillman on February 12th. In December she had been taken sick with violent abdominal pains, nausea and vomiting, with obstinate constipation. During January she had two similar attacks, and in one of them it was nearly a week before the bowels could be opened. Her menstruation had always been regular, but very scanty for two years, and in January there had been no flow. The patient had lost a good deal of flesh, but was still well nourished, and at my visit was more comfortable than she had been for a month. She had been married twice, living with the first husband a good many years, and with the last one seven years, but had never been pregnant. Examination revealed a fibroid uterus, about the size of a cocoanut, filling the pelvis and extending into the left iliac region; the uterine cavity measured three and one half inches, and no bleeding followed the introduction of the sound.

On March 11th I again visited the patient. There had been no severe suffering since my last visit, one month before, but a good deal of abdominal pain and soreness. It had been almost impossible to keep the bowels open, notwithstanding purgatives and enemata were continuously used. The tumor had grown rapidly and extended up to the umbilicus. Pregnancy in a fibroid uterus was suspected, and the husband so informed, but I inclined to the

opinion that the rapidly growing tumor was a sarcoma. On March 25th I was called to the patient and found her with peritonitis and suffering intensely; the abdomen was greatly distended, the tumor had continued to grow rapidly, and was extremely sensitive to manipulation; there was nausea and vomiting, and the bowels were obstinately constipated. I was forced to give hypodermics, so intense were her sufferings. Purgatives and enemata were employed, but it was several days before the bowels moved, and then not satisfactorily. From March 25th to April 11th the patient remained in bed, scarcely able to change her position on account of pain, able to take but little nourishment, and daily losing ground, with total intestinal obstruction threatened.

On April 11th she went to the Protestant Infirmary. It was evident that an operation was necessary; without it she could live but a short time, and there was nothing but suffering to look forward to. The family were fully informed as to her condition. It was my opinion that the tumor was probably a sarcoma, but pregnancy in a fibroid uterus was a possibility, and this was stated to the family and the physicians present. No matter whether pregnancy existed or not, it was necessary that an operation be done, and this opinion was given and the operation advised. On April 13th I operated, assisted by Drs. Scott, Moore, and Carrick. The tumor extended almost to the diaphragm, was extremely muscular and intimately adherent to the intestines and omentum, and was firmly fixed posteriorly. Every thing seemed a large fibroid mass, and on the surface coursed blood-vessels as large as the little finger; the peritoneum was of a dark livid color, and an active peritonitis was in progress; the intestines were full of gas, coils of small intestines were firmly and closely attached to the tumor, and why total obstruction did not exist I can not

understand. The adhesions were separated with great difficulty, and a great many ligatures were necessary to control hemorrhage; the lower part of the tumor, as large as my thigh, was encircled by an elastic tourniquet. On cutting into the mass several abscesses were opened and a quantity of pus escaped into the peritoneal cavity. On entering the uterine cavity a fetus was felt, which with the placenta was quickly delivered through the incision. The pregnancy had advanced to about four and a half months. The *serre-nœud* was placed about the pedicle and the elastic tourniquet removed; the mass above the *nœud*, the fibroid, and most of the uterus were cut away, and the pedicle was transfixed and fixed into the lower end of the incision. The small bowel was injured during the manipulation, but was immediately stitched. The peritoneal cavity was copiously irrigated and a glass drainage-tube inserted. Duration of the operation one hour. The pulse was less than 100 when the patient was taken from the operating room, and her condition was satisfactory. With the exception of nausea and vomiting she seemed to do well for three days, when septic peritonitis developed. After the third day she slowly grew worse, and on the seventh day after the operation died of septic peritonitis. The bowels never moved after the operation, notwithstanding purgatives and enemata were repeatedly employed. The pulse remained good until the last; the temperature was practically normal throughout, and there was never great abdominal distension.

Remarks. The cases reported in this paper have been selected from a number of operative cases because of their unusual interest. Most of the operations were difficult, much more so than in the majority of operations done by abdominal surgeons. My earnest wish has been to be candid in my report and state simply facts, and I hope that in this I have succeeded, for, if I have not, this report can be

of but little use to myself or any one else. In all of the cases except one the necessity of surgical interference could not be questioned, but in that one (Case 7) I am candid to admit I was misled by symptoms and did an unnecessary operation, subjecting the patient to some risk without in any way benefiting her. It is difficult to decide in many cases of pelvic inflammation the best treatment to adopt, and it is often necessary to keep such cases under careful observation for a time before giving positive advice. Most of us have been disappointed and sorely tried by some case not benefited by celiotomy. The operator had removed the tubes and ovaries, the patient had returned to her home believing that soon she would be well, for the surgeon had removed, as he thought, the cause of her suffering. In a few months she realizes that she has not been benefited; the family physician is again called, and worries along with the patient indefinitely. On the other hand, when cases are properly selected for operation there will be but few disappointments, for there is no surgical procedure giving such brilliant results as do properly done celiotomies in cases judiciously selected. To have patients almost dead with intra-peritoneal disease restored to health and happiness in a few weeks is indeed a pleasant reflection. The operative skill and technique employed in this special work has well-nigh reached perfection, and is as near ideal surgery as we can expect to attain, and in properly selected cases no one can criticise the results.

The importance of carefully studying a case before resorting to operation can not be too earnestly insisted upon, for an occasional too hasty resort to operation in non-suitable cases has been the cause of severe criticism on the part of some members of our profession. I admit there is some slight ground for this criticism, for I have known the abdomen to be opened when I thought the operation should

not have been done, but this is certainly very exceptional. To study and watch the "border line" cases before giving positive advice will repay the surgeon, and will hush the carping of those who are inclined to criticise unjustly and magnify and multiply an occasional error.

DISCUSSION.

DR. WILLIAM H. WATHEN, of Louisville: For the second time I am pleased to commend the position taken by Dr. Barrow in his report, especially to commend his honesty in presenting facts observed in his own experience just as he had seen them. The only way we can arrive at many conclusions accurately is by honest and accurate reports of the results of observations and of work, the good results and the bad results alike, and Dr. Barrow seems to be capable of accomplishing these two ends. He acknowledges that he has possibly operated upon one case that should not have been operated upon. I think I have done the same thing more than once. But by report of experiences of this sort, as we grow older in experience and observation, if we are honest in observation and honest in work, we do better, and the mistakes of our early work are not so often repeated. In the report of the case of hysterectomy, with a fetus in the womb, I am inclined to the opinion that had he introduced a large gauze drain in addition to the tube this woman would have been given a better chance for life. I was educated to believe in the tube to the exclusion of every thing else in abdominal drainage, and to drain in nearly every case. I have written one or more papers taking this position; but I have somewhat changed my opinion, and I am now not such an earnest advocate of drainage as I formerly was; and I believe if surgical work is done cleanly that drainage is not very often necessary, and that the patients will recover about as readily without it as with it, and that by avoiding drainage we likewise avoid certain elements of danger that necessarily exist with it. But there are cases that, with our present knowledge of abdominal surgery, with all the technique that we now know any thing

about, must be drained, and it is a question which is the most efficient manner of drainage. If drainage is sufficient, its efficiency consists in the removal in the most complete manner of secretions of whatever character within the abdomen and pelvic cavity. Of course, if these are removed, we take away the pabulum upon which the pathogenic germs may develop and multiply into fatal peritonitis. Now, then, if that be true, there is no method of drainage that accomplishes this in a manner comparable to gauze.

DR. J. G. CARPENTER, of Stanford: In regard to exploratory incisions, we should make the diagnosis sufficient to know that there is a pathological lesion endangering health or life, and in that way an exploratory incision is demanded; but just to make an exploratory incision to see if there is something in the abdomen is all wrong. We should operate for pathological lesions and remove them when we find them, if they can be removed. I have seen time and again specimens of diseased tubes and ovaries produced by dilatation, curetting, caustics, and uterine sounds. It is said that fibroids are harmless, and that the menopause arrests their growth. In the majority of cases the menopause does not arrest their growth. They are dangerous to remain; they cause death by hemorrhage, pressure, and exhaustion, and they undergo gangrene. Of all growths they are the most frequent to undergo cancerous degeneration. I have seen a number of fibroids, and the advice has been given to leave them alone until after the menopause; but they underwent cancerous degeneration. The abdominal surgeons of Philadelphia confirm me in this point, that fibroids are the most prone of all tumors to undergo cancerous degeneration after the menopause.

As to whether drainage has been abused, I would say that each case of abdominal section is a law unto itself as to drainage, and a number of them do not need irrigation or the drainage-tube. The peritoneal cavity has not been infected, and in that case there is no need for drainage. There are others which present numerous adhesions with danger of hemorrhage, and in which the peritoneum has been infected by rupture of the dermoid, or in which there has been cancerous degeneration going on of a part of the tumor, and in these it is imperative to irrigate and drain.

SOME OBSERVATIONS ON PELVIC INFLAMMATION, ESPECIALLY RELATING TO ITS ETIOLOGY AND PATHOLOGY.

By L. S. McMurtry, M. D.
Louisville, Ky.

Intra-pelvic inflammations, with complications and sequelæ, compose the largest class of all the diseases of the pelvic organs in women. The pathology of this condition until recently rested upon a purely hypothetical basis, and in consequence was erroneous and misleading. Bernutz and Goupil thirty years ago, after careful clinical and *post-mortem* investigations, clearly set forth the true pathology of pelvic inflammations. The memoirs of these masters of the French school of gynecology were translated into English, and published under the editorial care of Alfred Meadows in London, and were reviewed at length by Parvin in this country, but the profession deliberately turned away from the truth and refused to accept it, preferring to adopt an altogether mythical pathology.

All the acute inflammatory diseases were classed under the general term of cellulitis, and no accurate knowledge existed as to the cause of the pathological process or the nature of the lesions. When operative surgery opened up the peritoneum to daily observation all these errors were dissipated, and a correct knowledge established. It is now known that pelvic cellulitis as a primary disease is of doubtful existence, and that so-called idiopathic peritonitis is a misnomer, misleading both as to pathology and treat-

ment. Peritonitis is invariably the result of infection or traumatism.

The pelvic inflammations, formerly so obscure, are now simplified so as to be clearly understood. If the causes of pelvic inflammation be thoroughly appreciated, there need be no difficulty in separating cases of real and apparent disease. The following essential points in the etiology and pathology of pelvic inflammations are established and can be demonstrated:

1. The lesions of pelvic inflammations have their focus and point of departure in the uterine appendages, especially the fallopian tubes, and involve varying areas of peritoneum.

2. The lesions are the result of infection, and the infection is almost invariably from without. Indeed the exceptions to this are so rare that the rule may practically be regarded invariable.

The mode of infection, as well as its exact character, varies, and I shall endeavor to describe these several modes of access as they have appeared in a rather extensive clinical experience.

The infection may be of puerperal origin, of mild or severe grade, which presents serious lesions in the form of tubo-ovarian disease and recurring peritonitis with adhesions months and even years afterward. The infection may come from disregard of aseptic methods during labor. Excessive douching immediately after labor and during convalescence with excessively strong chemical solutions may be the means of infection.

Infection is very common after abortion or miscarriage. The placenta is not mature and ripe for detachment by contraction, and is readily retained, thereby favoring septic processes. Continued bleeding is another factor conducing to septic infection in this condition.

Gonorrhea is one of the most common causes of pelvic inflammations in women. The virus is so active and poisonous, and the channels of infection so direct and patulous, that the infection is readily conveyed to the endometrium and fallopian tubes, rapidly matting together the broad ligament and contiguous structures, and forming large sacs of poisonous pus. It must be remembered that the lymphatic channels about the cervix uteri convey infectious material to the peritoneum independently of the common method of continuity of mucous surfaces.

To these, which I will call natural causes, must be added the strictly artificial causes. There can be no doubt that the simplest procedures may, under certain circumstances, beget most serious lesions. The vaginal douche, for example, which is of inestimable value in treating pelvic congestions, may, if used with too great force or at the menstrual periods, start an inflammatory process, to end in inflammation of the tubes, ovaries, and peritoneum. Also the uterine sound, if unclean, may transmit an infection, and in certain rare cases may by its very presence produce severe pain, a chill, fever, and inflammation. How such simple interference with the interior of the uterus may be the cause of such serious mischief is as inexplicable as is the disturbance sometimes following the introduction of a sound into the male urethra.

The severe grades of tubo-ovarian inflammation and peritonitis following intra-uterine applications and operations upon the cervix are so common that these prolific causes of pelvic inflammation are becoming very generally recognized. The application of caustics to the endometrium and cervix, as is so commonly done to stimulate repair and change the nature of lesions too often misinterpreted, together with astringents and other agents, produce necrosis of tissue and infection along the patulous peritoneal channels.

One of the most common causes of pelvic inflammation is the operation of divulsion and dilatation of the cervix. This is usually done for relief of dysmenorrhea or sterility from fancied stenosis of the cervix. It is an operation so mischievous in its results, and so seldom necessary, that it would be best if it were entirely banished from gynecological practice. Dilatation with sponge and laminaria tents is invariably followed by varying grades of salpingitis and peritonitis, and divulsion of the cervix by powerful steel instruments produces laceration of the cervical tissues in the midst of lymphatic channels leading directly to the peritoneum. The results of this operation are never satisfactory as to permanent relief of dysmenorrhea and reflex disturbances, and its mischievous results far counterbalance any good it can accomplish. Any one who sees much of pelvic diseases can constantly trace tubo-ovarian inflammation and associated pelvic peritonitis directly to the traumatism and subsequent infection of forcible dilatation of the cervix. Excessive venery may cause lesions ending in pelvic inflammation.

In young women the accidents and disturbances of menstruation may produce intra-pelvic inflammations, terminating in adhesions, or may be going on to suppuration. During the past few weeks I operated in the case of a pure and refined young lady of twenty, in which an immense pyo-salpinx and ovarian abscess had their start apparently in an inflammation due to exposure during menstruation. There are certain systemic diseases, such as tuberculosis and syphilis, which may by localized lesions cause pelvic inflammation.

When an infection has been introduced into the vagina it may extend by continuity through the endometrium to the fallopian tubes. When a specific infection is carried to lacerated surfaces of the vagina or cervix it is rapidly

conveyed to the peritoneum through the communicating lymphatic vessels. Very soon after invasion of fallopian tubes and adjacent peritoneum the fimbriæ of the tubes become folded and adherent, closing the distal ends of the tubes. Recurring attacks of peritonitis mark occasional rupture and leakage through these adhesions by the pressure of retained septic fluids. Adhesions are formed by the inflammation of serous surfaces, and layers of inflammatory exudate mat together the ovary, tube, and adjacent intestine. By these adhesions nature persists in an effort to limit the impending abscess cavity and protect the general peritoneum. In certain grades of inflammation the retained fluid is serum (hydro-salpinx), very prone to purulent change (pyo-salpinx); while in other grades of inflammation, particularly gonorrhea, the inflammatory products are purulent from the beginning. The inflammatory exudate cements the peritoneal surfaces of the pelvic viscera, and as organization progresses contraction takes place, thus displacing the uterus and diseased appendages and destroying the mobility of serous surfaces. The inflammation of the ovary in this process is secondary to the tubal disease. The fimbriated extremity of the tube becomes attached to the surface of the ovary, infects that organ, and as the process of suppuration goes on the ovary and tube coalesce into one large sac inclosed in layers of plastic exudate. When the abscess cavity thus formed seeks to discharge its contents the contained pus seeks the route of least resistance. It may open into bowel, bladder, vagina or into the general peritoneum. When emptied the sac refills, and the same process is repeated. When tapped through the vaginal fornix the thick, necrotic mass composing the sac remains, and even if drained the patient must be subjected to a long suppurative process before a cure can result—a process more dangerous than abdominal

section. The pus-sac shown in Figure 2 accompanying this article demonstrates this condition. Early in the process of suppurative inflammation of the fallopian tubes the lumen of the tube is closed at multiple points. One can show this to be a characteristic lesion in the specimen removed. Hence it is impossible to drain away the contained fluids of hydro-salpinx or pyo-salpinx by gauze or other capillary drains inserted in the uterine cavity; and when tapped, one pocket of the pyo-salpinx may be emptied and others left behind untouched.

The photograph (Figure 1), made from a specimen which I recently removed by abdominal section in a case of pelvic inflammation of long standing, illustrates the lesions of a severe grade of inflammation advanced to the stage of suppuration. The patient is twenty-six years of age; had been married one year. The disease had existed several years prior to marriage, and had its origin in a slow process of cystic degeneration of the ovaries; salpingitis was a more recent complication, terminating in pyo-salpinx. The uterus and its appendages were matted together and to adjacent structures by inflammatory exudate. This specimen illustrates long standing salpingitis and peritonitis, associated with cystic degeneration of the ovaries. The fallopian tubes are filled with thick, cheesy matter, the fluid elements having been absorbed.

The specimen (Figure 2) illustrates the most severe grade of pelvic inflammation. The disease had its origin apparently in forcible dilatation of the cervix, and progressed ultimately to suppuration. As in the previous case, the inflammatory lesions are associated with cystic degeneration. The suppuration of tube and ovary on one side formed an immense sac of pus, which communicated with the rectum. The operation of forcible dilatation of the cervix was done for sterility, and active inflammatory

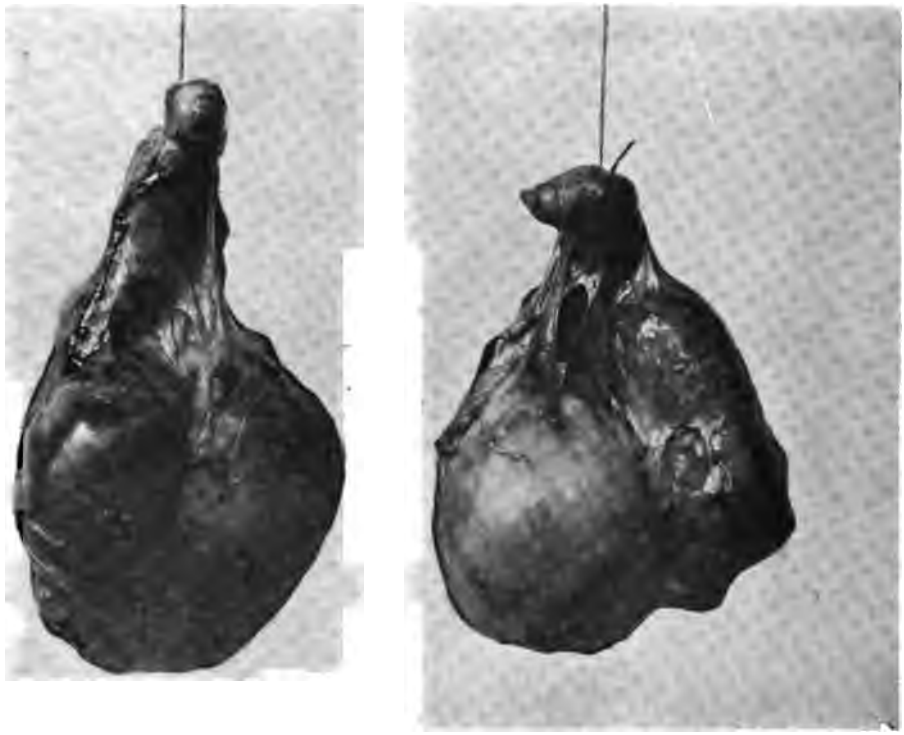


FIG. 1.

Double Pyosalpinx and Cystic Ovaries.

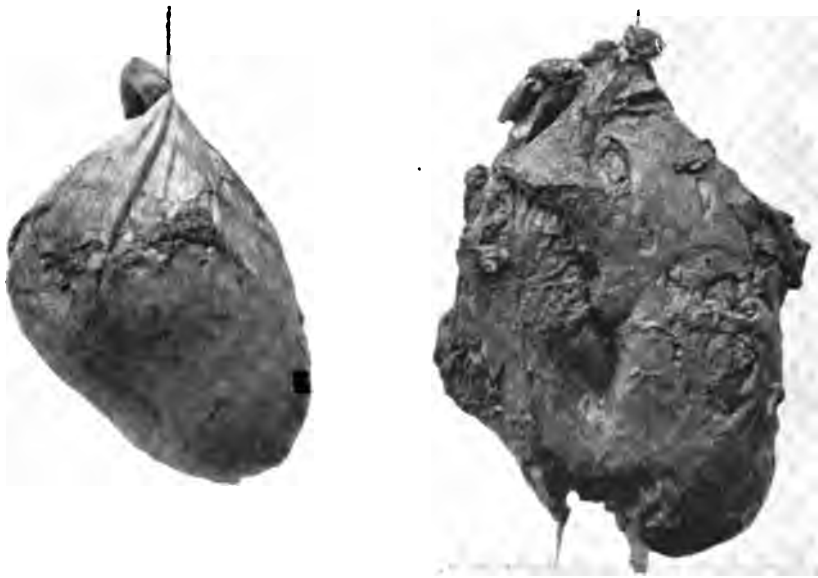


FIG. 2.

Parovarian Cyst. Pyosalpinx and Ovarian Abscess.

symptoms quickly supervened. The opposite side presented a parovarian cyst almost as large as the pus-sac. Successive layers of inflammatory exudate were deposited, rendering the pus-sac very thick. It was ruptured while being removed.

Another specimen was removed a few days since in the midst of an active peritonitis. The tubal inflammation had its origin in an infection during the puerperal period, which was followed by recurring attacks of peritonitis. The fallopian tubes on each side contained pus, and all the pelvic organs were matted together by adhesive peritonitis. (Specimen exhibited.)

In conclusion I desire to record a case which, so far as my knowledge goes, is without parallel, and presents features interesting and unique: Mrs. R., aged thirty-two, married, the mother of four children, suffered with an attack of puerperal peritonitis during her last confinement, fifteen months ago. After a time she got up, but was not well. Being a young, energetic, and industrious woman, she persisted in giving attention to her household duties, and did not seek treatment. On the 26th of December, 1892, she went sleigh-riding with her husband and children, and, returning home, leaped from the sleigh to the ground. She was at once seized with violent pain in the abdomen, was cold and faint, and had to be carried into the house. She was put to bed, and the family physician, Dr. H. E. Pelle, was summoned. The doctor found her shocked and suffering, and administered stimulants and morphia hypodermically. She rallied, but developed an acute and diffuse pelvic peritonitis. I saw the patient on New Year's day, and found her condition most serious. The pulse was 140, the temperature 104.6° F., cheeks flushed, and entire surface wet with perspiration; the abdomen swollen and tender, limbs drawn up, and features pinched;

persistent vomiting. The pelvis was packed with inflammatory products, all the pelvic contents fixed by inflammatory exudate. The daily use of the catheter had been required for seven days, and so extreme was the intrapelvic pressure that a metal catheter alone would empty the bladder. The patient was quickly transported to the infirmary, and preparations made for immediate operation. Dr. Pelle took the temperature in the mouth with a reliable thermometer just before she went on the table, and found the temperature subnormal. The pulse was small and feeble. Ether was administered by Dr. J. W. Guest. Dr. W. R. Kirk assisted, and Dr. Pelle was present throughout the operation. Several members of the advanced class of the Hospital College witnessed the operation.

On opening the abdomen the adhesions were found universal, and the omentum was fixed as a roof across the pelvis. On the left side pus was abundant in the peritoneum, and ran freely out the incision as soon as adhesions were broken up. In stripping away the ruptured abscess sac (fallopian tube, ovary, and broad ligament) from the sigmoid flexure of the colon, an opening was made in the gut. Fecal gas was apparent by the odor coming up through the abdominal incision. In separating the suppurating mass upon the opposite side (tube, ovary, and broad ligament) great difficulty was encountered. The adhesions were old and organized. In accomplishing this, although not using extreme force, an active hemorrhage was started, and realizing the danger from shock I proceeded with all possible expedition. In turning out the mass I was amazed to see the body of the uterus come away with the mass, and I was confronted with an alarming hemorrhage. I quickly siezed the cervix uteri at the floor of the pelvis with a large Spencer Wells clamp, and at once arrested the bleeding. At this time the patient was pulse-

less. I proceeded quickly to fill the peritoneum with hot water, packed the pelvis down to the point of injured gut with iodoform gauze, left the abdominal incision open with the clamp protruding, and hurried the patient to bed. Digitalin and strychnia were administered hypodermically, also brandy and nitro-glycerine. The heart was acting, but no pulse could be detected in the temporal or radial arteries for almost an hour. The circulation was gradually restored. The clamp was removed at the end of forty-eight hours, as was also the gauze packing. The patient had a large fecal fistula for eight days, great quantities of fecal matter pouring out the incision. This gradually closed, and ceased to discharge altogether on the eleventh day. The edges of the incision granulated, and were approximated by adhesive plaster. The wound healed thoroughly, and the patient's convalescence after the sixth day was quite easy. She returned home quite well at the end of six weeks, and is now, four months afterward, in perfect health, discharging all her domestic duties as formerly.

The specimen removed was carefully examined by all the physicians present, and the dissection demonstrated beyond question that the body of the uterus was in a sphacelated condition and came away with the mass of disintegrated structures. The history and initial symptoms would have justified a conditional diagnosis of ruptured tubal pregnancy. This case illustrates the most extreme ravages of pelvic inflammation, and demonstrates the efficacy of surgical treatment in the midst of desperate conditions.

DISCUSSION.

DR. CECIL: I wish to address myself to a point relating to a portion of Dr. McMurtry's paper. The author emphasized as the causes of pelvic troubles inflammations occurring especially in the tubes and about the ovaries. The two causes

which I think deserve even more especial emphasis are puerperal sepsis and gonorrhea. In my judgment and in my observation these two causes are largely responsible for the conditions which render the knife imperative. I must take issue, however, with the doctor on his position in regard to some of the minor gynecological operations which I believe yet have a place in gynecology. I believe that some of these minor operations have done more for the relief of suffering and the saving of life than any of the major operations, such as the removal of the tubes, ovaries, ovarian cysts, and other tumors which occur in this region. But there is a field for the dilator, and I was rather surprised that the writer took such emphatic grounds on this subject. No doubt he felt justified in the harm that it has done in unskillful hands, but I can not agree that it is responsible for so many troubles as he seems to attribute to it. There are conditions of the womb which demand treatment, which do not demand surgery, which can not be treated unless there is a free and easy access to the cavity of the womb. In such conditions as follow labor, in such conditions as follow abortions particularly, in such conditions as we find in chronic womb diseases, which are generally going to terminate in endometritis, endocervicitis, etc., and particularly of the chronic gonorrheal kind, I maintain it is good practice to dilate the cervix, and I do not believe there is any safer operation, if properly done, than to dilate with a steel dilator. Do it quickly, under the strictest aseptic precautions. I do not think it is a dangerous operation, but it ought not to be performed in a haphazard way, as it often has been done; it ought to be invested with all the dignity of an operation, and where it is so dignified it will not be followed by the dire results that have been indicated in the paper. If we were to abolish the use of the dilator, I believe that we would be handicapped in the treatment of many of the diseases which do not and ought not to come into the hands of the pelvic surgeon. I therefore can not concur with the author that the dilator is such a source of trouble. I believe that the medical profession in general is being educated up to a point very rapidly where it is made known or apparent that all operations about the uterine cavity should be invested with

all precautions; and when this is done we shall not see such results as the author depicts. I have seen this operation followed by many good results; I have seen so many cases that have defied medical treatment resulting in cure, in thorough cure, that I can not, for one at least, agree to abandon the use of these instruments. I agree with him that they have been abused, most sadly abused, and I agree with him also that many cases of pelvic trouble demanding the knife are strictly attributable to dilatations and to curettings, and to other operations of that class; but when they are done properly, when they are surrounded with all the precautions necessary, I do not believe that they are potent for harm.

DR. F. J. YAGER, of Campbellsburg: I rise to approve the gentleman that made the discrimination and the investigation in relation to the general instruments that we use for exploratory purposes. I do not see the injury that can result in the use of dilators. I was not competent to doubt one word that Dr. McMurtry said, and since Dr. Cecil has brought up these things he has given me an item of thought that I may have some appreciation of the investigation of these subjects, and I want to say that I feel proud that these young men have made these investigations, proud of the progress of medical science and surgery, and I feel now an inch taller than when I got here yesterday to see the great advances that we have made in the general operations of medical and surgical science.

INTUBATION OF THE LARYNX AND ESOPHAGUS.

By Wm. Cheatham, A. B., M. D.
Louisville, Ky.

The history of intubation of the larynx has been so frequently written that I think it hardly necessary to repeat it here. That much has been said against it and since proven false, no one can deny. Its position is so well established I do not believe it debatable. That it can take the place of tracheotomy in all cases its most earnest advocates will not claim. That intubation in laryngeal croup is more successful than tracheotomy I do not think there is any doubt. I wish to say here that I believe there is but one cause of laryngeal croup, and that is diphtheria. That there are at least three forms of diphtheria, one only having the Klebs-Loefler bacillus as a cause is now a well-established fact. That diphtheria is at first a local disease, I believe, and believing this, Bourges' description of the disease, "that there are two sets of symptoms, one local, producing 'mechanical' accidents, due to false membrane, the other general, due to poisoning by the diphtheritic toxine;" that is, when the Klebs-Loefler bacillus is present.

In considering this subject of intubation, I shall refer to it not only in croup of the larynx, but as a relief in stenosis of the larynx from other causes; and also wish to refer to intubation of the esophagus for stricture and carcinoma. When I introduced intubation of the larynx in Louisville I was not much encouraged by the local profes-

sion, and especially when I had but one success in my first fifteen cases. Tracheotomy had been more successful than that. My success since, with that of others who have taken it up, has, I believe, so well established the operation that no one there now would think of performing tracheotomy if they can have intubation done.

In 1889 I showed the instruments for intubation in the "Great Ormond Street Hospital" for children, in London, where it has been performed many times since with success. In the same year I had the pleasure of lecturing on the subject at Professor Krause's Polyclinic in Berlin. The operation is now performed all over the world. Having been brought to perfection in America by an American, it was not adopted as readily abroad as it should have been.

As to the instruments needed in this operation, none of them have been brought to the perfection of those made under Dr. O'Dwyer's supervision, except possibly the introductor now used by Dr. Pusey and myself, suggested by Dr. Pusey. In this introductor the instrument is much simplified, and is much easier cleansed. The tube is dislodged by the forefinger of the left hand, so the complicated and difficult-to-clean instrument found now in the cases of instruments sold by the dealers will soon be a thing of the past.

One undertaking the operation of intubation of the larynx should have several tubes of the different sizes, from the smallest to the adult tube; one gag; two extractors, one short for children and a larger one for adults; a scale for measuring the tubes, which would be unnecessary if the tubes were numbered; a metal protector for the left forefinger, or a strip of adhesive plaster (the kind that sticks to itself only) for protection of the finger; a bottle of collodion to seal up all abrasions on the hand, and some carbolic acid or antiseptic tablets for cleansing the hands;

some braided silk, as it will not knot when being withdrawn from the tube; a pair of forceps to remove membrane from the larynx if it should be dislodged by the tube; some nitrite of amyl or nitro-glycerine, and whisky with a hypodermic syringe; and a set of tracheotomy instruments. I am sure I saved the life of one child by having convenient the nitrite of amyl. Quick action was needed, and without hesitancy I poured, I do not know how much of the amyl, into my mouth, closed the nose of the child, put my mouth to its and blew the amyl into its lungs; reaction was prompt. The introduction and removal of the tube in the young is by feeling entirely. In the adult it can be done with the assistance of the laryngeal mirror. In the adult the operation by feeling is more difficult than in the child, as the larynx is so much more difficult to reach with the finger; the same applies to the removal of the tube. Feeding with the tube in position, especially fluids, has to be done with the larynx lower than the chest, so the fluids can not enter the lungs.

Two of my successful cases were fed with milk from a rag, the child taking the usual position on the side with the head well over, or on the back with pillows under the shoulders, or the head hanging over the side of the bed. This question of feeding is a very important one, as it is well known that even under the most favorable circumstances it is a fight from the beginning of the disease. The removal of the tube has always been to me much more difficult than its introduction. This has been partly overcome by a method for the introduction of which I have recently noticed I am given the credit; that, is by pushing the tube out by external pressure from below, making the pressure up and back with the thumb of the left hand, and catching the tube with the forefinger of the right hand introduced into the mouth. So the difficulties attending

the operation are disappearing one by one, and the operation rapidly approaching perfection. It has now progressed so far as to give better results than any other in laryngeal croup up to ten years of age, and as good to those older. The operation, as I stated before, is here to stay, and too much glory can not be given Dr. Joseph O'Dwyer, of New York, who has brought it to such perfection. That it is not an easy operation to perform, and that every one is not capable of performing it, many have found out by experience.

After eight or ten years of age the death-rate is known to be very high, and is accounted for by the knowledge that it must be a very severe type of the disease to obstruct a larynx so large. I have tubed fifty-nine cases with twenty-four successes, or a little over 40 per cent. Leaving out my first fifteen cases I have in the remaining forty-four, twenty-three successful, or over 52 per cent.

Intubation is also practicable in stenosis of the larynx, the result of growths of that organ, especially papillomata, as by the presence of the tube the stenosis is relieved and pressure made upon the growth so as to cause its absorption. I have now a child about three years old with papilloma of the larynx, who has been wearing a tube since September last. The tube has been removed and another introduced about four times in the meantime. Yesterday I received a message from this little fellow saying he had coughed the tube out. I ordered him brought to the office. I found the tube in position, removed it, and as his breathing was so good without it, I left it out.

Intubation is also successful in stricture of the larynx, the result of disease or trauma; in these affections we also get good results from the pressure of the tube.

Dr. G. M. Lefferts, of New York, says in the Medical Record of October 4, 1890: "Confining myself then to the

question of syphilis alone, intubation certainly offers in a large proportion of instances the simplest and most practical means yet devised of quickly and efficiently relieving the dyspnea of acute laryngeal stenosis, thus avoiding a tracheotomy, and for dilating chronic cicatricial stricture in its varying grades and forms with speed and certainty, thus dispensing with the temporary or permanent necessity of a tracheal canula."

Dr. Lefferts had a patient to wear one tube ten months and four days.

I have a patient forty-five years of age with paralysis of the abductors of the larynx, who has been wearing a tube for several months. In paralysis of the abductors the vocal cords come close together, and the more the patient makes an effort to breathe the closer they come, thus interfering much with inspiration; the patient now wearing the tube I am sure could not have lived much longer without the relief given her by its introduction or tracheotomy; her skin was purple, and she could sleep but a few moments, yet would fall asleep while talking to any one. One suggestion I wish to make in regard to patients wearing tubes for any length of time, and also those wearing tracheotomy tubes; some little fluid should occasionally be allowed to enter the tube and larynx to excite cough, and while coughing the patient should lie down on the stomach with the chest low to allow any fluid or excretions retained in the lungs to be cleared out. It is a fact that with either the intubation or the tracheotomy tube in position, the patient not being able to constrict the larynx while coughing, can not give the expulsive act enough force to clear out the lungs. The position spoken of above favors this.

In considering the subject of intubation of the esophagus, I will, with your permission, quote from an article on Intubation of the Esophagus for Carcinoma and for Strict-

ure, by J. Solis Cohen, M. D., of Philadelphia, read February 12, 1890, before the Philadelphia County Medical Society:

For several years Sir Morell Mackenzie had used permanent intubation in cases of stricture of the esophagus with absolute aphagia; but he had not extended the treatment to strictures of carcinomatous origin. He forced a tube through the stricture by the aid of a rod of whalebone or vulcanite. The tubes were removed at intervals of a few days by means of strings permanently attached to the proximal extremity and secured around the patient's ear or the back of his head.

A few years ago, recognizing that the long esophageal catheter projecting from the mouth produces great distress in some cases, partly from irritation of the larynx, partly from the necessity of expectorating the saliva so that its retention can not be tolerated, Mr. Charles J. Symonds, of London, without any knowledge of Mackenzie's method of intubation, determined, in such an instance, to attempt to avoid an otherwise apparently imminent gastrostomy by passing a much shorter tube simply through the stricture for practically permant use, its distal extremity reaching to the stomach, and its proximal extremity secured by strands of silk which, projecting beyond the mouth, could be fastened to the ear or around a conveniently located tooth to prevent its being bitten through. More recently Symonds protects the thread with a section of rubber tubing. This treatment, as in Mackenzie's cases of stricture, enabled the patient to swallow aliment instead of having it injected, and kept him alive for eight months in comparative comfort, without any inconvenience from the retention, removal, and reinsertion of the series of tubes used. The stricture underwent considerable dilatation so that tubes of larger caliber could be used later. At the *post-mortem* examination no injurious effect attributable to the tubes was apparent.

Symonds' modification of Krishaber's method has two important original features. It preserves the power of swallowing and thus allows the patient the pleasure of tasting his food, and it substitutes a piece of silk in the mouth for the

extremity of a long tube and thus avoids in considerable measure the accumulation and expectoration of saliva. Furthermore, the cricoid cartilage is protected from irritation by the pressure of a foreign substance, and attention to the patient's forlorn condition is not attracted by the sight of a tube projecting from the mouth or the nose. According to Symonds' directions a short catheter tube, about six inches in length with a large eye about one fourth of an inch, is passed through the stricture until the funnel rests upon its upper face. It is introduced on the end of a conical bougie or with an improvised introducer of copper wire or a special rigid guide of whalebone. The best material he finds to be that sort of vulcanized rubber made on a silken web, the thickness remaining the same for all sizes of tubes. It is sufficiently stout to produce dilatation and maintain it, and it is quite durable. A piece of plaited silk is passed through the sides of the funnel about three eighth of an inch below the rim; the central portion is drawn out in a loop which is attached to the extremities about two inches above the funnel. This arrangement of a single thread is better than using two, and never leads to blocking of the tube. A tube which with its silk had remained in the esophagus for three months was found sound and fit for use. The funnel becomes moulded to the shape of the esophagus. Great precaution should be taken to forbid the use of food bulky enough to block the tube. The most minutely divided solid food will be sure to clog the tube. Should a blocked tube not be promptly withdrawn there will be some danger that forcible efforts of glutition may drive it through the stricture and thus render its withdrawal impossible. In an instance related by Symonds, the tube was passed *per rectum* on the sixteenth day. Descent of the tube will be indicated by tightening of the cords in the throat. In an instance of this character Symonds found himself compelled to push the tube on into the stomach. It may be mentioned that at the autopsy of the patient, nine weeks later, the tube was found unchanged in the duodenum, which had not been injured. More frequently the dilatation produced by the sojourn of the tube for a few days will be sufficient to enable the aliment to pass along the side of the tube, as occurred in

some of Symonds' cases, and thus the danger of impaction of the tube will be lessened. This condition of things, if preventable or controllable, should not be allowed, however, as it subjects the diseased structures to unnecessary compression and to consequent irritation. While a tube can be worn without injury to the patient for several weeks at a time, I think it should be withdrawn every few days for purposes of inspection and cleansing. It will occasionally be found partially occluded with mucus or with sputa that has been swallowed. Should the tube be found quite movable in the stricture it may be left out altogether for a while, if the dilatation be sufficient to permit the passage of food to the stomach, and it may be replaced as soon as the stricture becomes sufficiently tight again to demand intubation, which may be expected in from a few days to three weeks or longer, according to circumstances. It sometimes occurs that there will be no necessity whatever for re-intubation.

According to Farwell, intubation tubes will sometimes excite inflammation and abscess so that gastrostomy has to be performed after all. On the whole, however, it appears from a careful review of the cases on record that intubation and catheterization, even with the prospect of gastrostomy in the long run, will preserve life fully as long as successful gastrostomy would do when performed in the first instance; while the patient will be saved the very imminent risk of perishing in direct sequence to the operation.

Unusually favorable results with an improved modification of Symonds' method of intubation have been reported by Leyden and Ranvers. For six months a female patient wore a tube the size of a goosequill, and her esophagus became thoroughly permeable again for liquids. During these six months she gained nearly eight kilograms or sixteen pounds in weight, after having lost one kilogram during the earlier portion of the treatment. A male patient fared still better. He gained seven kilograms within less than two months, and he resumed work. Some six weeks later his tube became clogged. He removed it, but could get no aliment through the stricture, and he returned to the hospital in a few days, having lost about ten kilograms in weight. The stricture was

found impassable for several days, during which time nourishment was given by the bowel. Finally an esophageal tube was passed and allowed to remain for a few days, when it was withdrawn and replaced by the permanent tube. In seven weeks the patient gained twelve kilograms in weight, at the rate of about half a pound a day. In both these cases nourishment had been maintained for several months with increase of weight, a general sense of well-being, and without any evidence of material progress in the disease threatening life in any other direction. This is certainly an admirable showing for intubation.

Dr. G. H. Rodman reports two instances of intubation, in one of which the patient survived for one hundred and seventy-one days and in the other for two hundred and three days. The former weighed one hundred and fifteen pounds, and increased seven pounds in the first eight days. The latter weighed one hundred and sixteen pounds and one half, and increased eleven pounds and one half the first five days and sixteen pounds in the first ten days. These two cases illustrate further that the tube can be left in position for comparatively long periods. In the first instance it had remained in position for eight weeks, when it became blocked and had to be removed. In the second instance the thread became severed by the teeth, and it was found impossible to remove it. It was suddenly ejected during a coughing spell, after having been in position one hundred and seventy-one days. To prevent similar severance of the thread Dr. Rodman has since used gimp, such as is used in pike-fishing, with a thin rubber casing over the portion passing through the mouth to prevent injury to the soft parts. In consequence of the blocking of the tube by casein or other matters Dr. Rodman advises that the eye of the tube be at the extreme end, and that when a lateral eye is used the tube should not be in the least degree perforated below that orifice.

Dilatation from the caliber of a No. 5 catheter, English gauge, to one of No. 12 or 14 has not been uncommon. A tube of the caliber of the No. 5 catheter, English gauge, is sufficiently large to permit the passage of liquid aliment, and one No. 7 or 8 is quite satisfactory. Smaller catheters than No. 5 are of little use.

Up to the latest published records Mr. Symonds' successes have been confined to carcinoma of the upper and middle portions of the esophagus, and according to more recent advices which I have privately received he had not yet succeeded in intubating a carcinoma at the cardiac portion.

I have had the good fortune, however, to find that the procedure is occasionally practicable in carcinoma of the cardiac portion. Some weeks ago, in a case of carcinoma of the cardia in an almost exhausted man seventy years of age, a patient of a member of this Society, Dr. Freund, I succeeded in passing the size next to the smallest, through which the patient was able to take nourishment the last three days of his life.

Dr. Freund has written me that "it seemed to him that if the tubes which were used on the patient had been inserted sooner his life would have been prolonged and much comfort would have been added to his existence. At the autopsy he found the stomach contracted and containing about three ounces of a dark liquid. On opening the anterior surface of the stomach the tumor was exposed, with the distal end of the intubation tube projecting about an inch and a half into the cavity of the stomach. The carcinomatous mass surrounded the cardiac orifice. It was about two inches in diameter and about one inch in thickness, and was shaped like a white turnip."

CONSERVATIVE SURGERY OF TO-DAY IN OBSTETRICS, ABDOMINAL AND PELVIC WORK.

By J. G. Carpenter, M. D.
Stanford, Ky.

A diamond in the rough is none the less a diamond, and when from the lapidary shines with more beauty and brilliancy than ever before. Crude midwifery is a thing of the past, yet, like the diamond, midwifery has been refined and perfected by the surgeon until the technique of obstetric surgery has reached definite limits, magnificent proportions, beautiful and perfect results.

When we survey the past, then behold the present status of conservative surgery, doubt has turned to a joyful reality; we see a beautiful drama, our admiration is excited to the utmost, and we exclaim: "O skilled surgeons, live forever!"

Every county, yes, town, of a population of one thousand, should have one or more first-class surgeons or obstetricians, educated, prepared, and equipped to do abdominal and pelvic work; for diseases of the abdominal and pelvic organs and cavities occur in the country as well as in the cities, and as frequently in proportion to the number of population. Trained nurses, surgical armamentarium, aseptic rooms, beds, linens, and furniture can be as easily obtained in the country as in the city. Therefore let us be ready and watchful, patiently awaiting the golden opportunity to save life, restore health, rescue our patients from

a premature death and grave. We thus become benefactors to the human race, ornaments to the profession, show much skill, and keep delay, temerity, ignorance, opium, and dirt out of the way.

The most useful physician to any community is, as a rule, the obstetrician; his skill and attainments should not be second to nor inferior to those of any other physician. He should be ever ready and equipped to meet any emergency; even remove a fibroid, pus-tube, or do a Porro or Sänger cesarean section. To the physician who has prepared himself with former training, apprenticeship, and equipments, the task is easy when demanded.

Practical obstetrics in this day and time of rapid progression means far more than examining the os, catheterizing the bladder, emptying the rectum, expelling the placenta, ligating the cord, and applying the binder.

When a woman becomes pregnant she should be under the watchful care of a competent physician, and be examined from time to time sufficiently to keep the blood, brain, spinal cord, and other nerve centers, liver and kidneys, and other organs in a normal state. Complications should be anticipated and prevented; neuroses or reflexes abated.

Microscopic and chemical examination of urine is highly essential in many cases to detect and arrest structural changes of kidneys, eliminate impurities, and prevent puerperal convulsions.

Should sight be impaired, an ophthalmoscopic examination should be made to confirm the presence of intra-ocular lesions and to direct treatment; to arrest, remove, and prevent further lesions, if necessary, or to induce premature labor to save eyesight.

Digital and conjoined manipulation ought to be made in order to ascertain the presence or absence of growths in the abdomen and pelvis; normal and abnormal position

of uterus, tubes, and ovaries; also presence of lesions in same, and bladder and rectum; a laceration of cervix or perineal body; position of placenta, position and presentation of fetus, and the existence of inherited dyscrasia, former dystocias in self, mother, sisters, aunts, and grandparents. The rectum and colon must be given special consideration and placed in a healthy state before labor.

The able intra-pelvic diagnostician, instead of giving opium or hypodermics for proctalgia, will examine his patient, detect a retroverted or retroflected uterus, restore it to normal position, and retain it with an antiseptic elastic wool tampon applied from time to time, or to insert a suitable pessary, and have patients wear one or the other until the uterus ascends beyond the promontory and is self-sustaining, thereby arresting and preventing abortion.

Thorough antisepsis and asepsis must be practiced before, during, and after labor, thereby preventing puerperal infection and ophthalmia neonatorum. The precious narrative of asepsis must be told again and again; many, many do not know it.

Under the head of asepsis and antisepsis we mean free purgation, hot water and lye soap bath, hot antiseptic injection and antiseptic wash for the genital organs, abdomen, and thighs twelve or twenty-four hours before labor; the latter repeated at the first stage and after the third, and subsequently "*pro re nata.*" The patient should be clothed with aseptic linens, and pad, bed, bedding, nurse, and accoucheur must be aseptic; the clothing and surgical paraphernalia, room, and furniture must be kept surgically clean. Our results in the salubrious country and country towns, the atmosphere of which always contains an excess of ozone, free from contaminating influences, should equal if not excel those of Preston Retreat—no deaths in 1,300 cases of labor.

The country physician deserves all praise, for the best results in cesarean section have been obtained in rural districts and private practice. Lusk says the habitual indifference of the rural practitioner to the publication of his triumphs is one of his besetting sins; and Stolz says a goodly number of successes as well as failures lie buried in the note-books of modest physicians; and specialists in abdominal and pelvic surgery have long ago realized the importance of selecting high, dry, rural districts for private sanitaria, with an abundance of sunlight, foliage, and ozone.

Last, but not least, the obstetrician's work is not done in each case of the puerperium until he has repaired any lesion that resulted from labor, prevented a return of former displacement of the womb, and restored the woman to her former health. And should he do his whole duty, first prepare the patient for the "lying-in period," then try to prevent complications during accouchement, and should they occur repair them at once, women would come out of the "lying-in chamber" sound and healthy. The dangers of delay, ignorance, timidity, prejudice, indolence, and lack of surgical skill, auto-infection, impaired health, and the morphine habit would be avoided; joy, happiness, prosperity, and health would be the patient's weal; and much gratitude, admiration from patients and friends, increase in clientele, reputation, and revenue would be the doctor's great reward. When the obstetrician has done his whole duty, then the abdominal and pelvic surgeons will have far less to do.

Forceps are a blessing to both mother and child; judiciously applied and in skillful hands they prevent lacerations, subsequent retention of urine, urethritis, cystitis, sloughing, and fistula of the utero-genital tract, prevent and arrest puerperal convulsions, shorten lingering labors, and in long continued, active labor, with violent convul-

sive pains, prevent rupture of the uterus, and in placenta previa arrest the hemorrhage by bringing down the head for a tampon, and when applied early, preceded by the hand, arrest "posterior occipito-iliac" positions, and make normal ones. When the fetal heart is feeble or inaudible the judicious use of forceps by hastening labor saves the life of the child. The writer has never had a laceration of the perineum in forceps cases, even in primipara; but has had lacerations when he did not use forceps, and caused by the shoulder and not the head of the child. Statistics show twenty-five per cent of primipara receive lacerations of perineum.

Yet we often hear general practitioners say that in a midwifery practice of ten or thirty years they never had and never saw a cervical or perineal laceration; they tell the truth in part; they are afraid to look for them, and if found they did not know how to repair them; and patients after an incomplete recovery go to some competent surgeon who does find them and give the proper surgical treatment.

We hope the day has come when the "cervix-feller" and the gynecological "tinkerer" will be no more, and that the words "obstetrician and gynecologist" will stand for the competent, skilled, and equipped abdominal and pelvic surgeon.

A lady once said she had no fears concerning her labor, as her obstetrician was also a good surgeon. By knowing the former history and present condition of the patient from conception to the end of gestation, the surgeon by digital and conjoined manipulation knows the possibility or impossibility of a natural labor before parturition sets in, and is forewarned, forearmed, and ready, the patient in every particular prepared and ready for the ordeal of normal, instrumental or premature labor, and also, if necessary, for abdominal section (celiotomy), either

the Porro or Sänger cesarean operation or symphysiotomy. If the patient's condition is known before accouchement, and she can not be delivered *per vias naturales* (except by embryotomy), she in competent hands is saved a long, tedious, exhausting, and dangerous labor, and by asepsis and surgical interference her life and that of the fetus are saved through abdominal section. In regard to the "elective cesarean section" Coe affirms, "The two elements of success are early operation and perfect technique;" and adds, "My experience entirely accords with the position taken by Harris, that, other things being equal, we increase rather than diminish our chances of success by operating before the commencement of labor.

Operate early, and you give both patient and surgeon every possible advantage. The elective operation should be made such in every sense of the word. It should be subject to the same rules which govern ovariotomy or abdominal hysterectomy. Let the surgeon choose his own time, near the end of pregnancy but before labor has begun, confident that he is thus acting for the best interest of both the mother and the child. Hemorrhage need not be feared; the danger of shock is lessened; sepsis is eliminated.

The success of Drs. Joseph and Mordecai Price, Charles P. Noble, William T. Lusk, Howard Kelly, and Grandin in elective cesarean section confirms the above statements. Ten operations reported since 1889 have been *practically elective;* that is, they were performed as a substitute for embryotomy, and *they were all successful.* (American Journal of Gynecology, January, 1893, Col.)

Indications for cesarean section are, deformity of pelvis with contraction of its diameters one half or two inches, tumors of various kinds blocking the pelvic outlet from abdominal and pelvic organs or from the bony pelvis, malignant disease of cervix; and impaction of the fetus

transversely across the pelvic brim may, under special consideration, be an indication for cesarean section. (Greig Smith.)

The general practitioner, as a rule, is the first to meet an appendicitis or pericecal inflammation. Upon his early diagnosis hang the life and destiny of the patient. It is incumbent upon him to give the "danger signal," "beat back the breakers," and with the surgeon's assistance land the "leaking barque" into the "haven of rest." If the surgeon is called early it means the saving of a life, short convalescence, removal of dangers that daily menace health, happiness, and life, a minimum of shock, short anesthesia, and two to three per cent mortality—a most beautiful picture to behold!

Simple recurrent appendicitis is a constant indication for section and appendisectomy. Ulcerative appendicitis, with or without perforation, though inclosed in thick lymph walls and adhesions, is a most cogent reason for section, for no physician knows when the lymph wall will soften, break down, leak, and produce purulent peritonitis, or the bands of lymph or adherent appendix constrict the lumen of the bowels and cause intestinal obstruction.

There is such a thing as a patient having only one attack of appendicitis (the case ending in recovery), but the cause would be the escape of the foreign body (appendolith) into the cecum, as well as the subsidence of inflammation and escape of the appendiceal secretion. By discharging its contents the appendix may atrophy after subsidence of the inflammation, and be converted into a cord-like body, no longer a source of trouble and danger. Rest, hot fomentations, free purgations, and astringent anodynes often seem to and do cure, but in recurrent cases never, but blindfold the victim and lead him over the precipice to his destruction.

When these symptoms subside, but return again, it is as a black cloud hanging over the patient, urging the physician to call the surgeon before it is forever too late, for, on the advent of another spell, ulceration with perforation and peritonitis are likely to take place, or a pericecal abscess may become encysted by lymph walls and powerful adhesions, which latter may give way or leak, and produce purulent peritonitis and death. Yet life could be saved by section. "When celiotomy is done before perforation the abdominal cavity is aseptic, the technique of the operation in all its details is aseptic, and the procedure becomes a life-saving measure, both conservative and curative, and prophylactic against future invasions of pericecal mischief." (Senn.)

The writer in his own practice has to record two interesting, unique, and illustrative cases of traumatic pericecal inflammation saved by judicious and timely section. One physician's diagnosis had been "hip-joint disease," another "typhoid fever." The temperature was 103.5°, pulse 130. An anesthetic was administered, and minute physical examination revealed pericecal abscess, which was trying to work its way to the surface and empty. The tumor was prominent, and could be mapped out distinctly and fluctuation elicited. Section, irrigation, and drainage saved the boy's life. Temperature and pulse were normal in twenty-four hours. The boy made a rapid recovery.

In another case tumor was detected in the cecal region. The boy was declining rapidly. Temperature was 102°, pulse 130. Section, irrigation, and drainage saved the boy's life. This case simulated remittent fever.

Dr. Joseph Price said he would make no delay by taxis for the reduction of strangulated hernia, but operate at once for its relief, and for the radical cure. Wyeth states: "Do not wait longer than the lesion of intussusception is

recognized; within the first twenty-four hours the prognosis will be more favorable and the danger of a fatal termination will be increased each day thereafter."

Taxis, however, should not be done longer than five or ten minutes at any one effort, and it may be repeated at intervals of half or one hour within the first six hours of the history of strangulation, and after twelve hours should not be practiced. "The majority of the cases which end fatally are those in which strangulation had existed twenty-four hours or more, and before surgical interference. Scientifically practiced massage and taxis have a limited range of application in the treatment of intestinal obstruction, are applicable to cases of obstruction due to a foreign body, an enterolith or fecal accumulations, and should only be resorted to before inflammatory changes have developed at the seat of obstruction and while patient is under anesthesia." (Senn.)

The rule now is, not to wait hours or a day to do taxis, but to do it only fifteen minutes, and never over thirty. Senn says true intestinal obstruction, whatever its cause may be, is as strictly a surgical affection as strangulated hernia, and remediable only by the same kind of surgical treatment. "To let a patient die of the consequences of a removable cause of obstruction without an operation is a reflection upon the advance of modern aggressive surgery."

The "menopause" does not arrest the growth of very many fibroids; they do grow and increase in size after this period, or undergo calcareous, fatty, cystic, or cancerous degeneration, or suppurate and take on gangrene. They kill by hemorrhage, pressure, and exhaustion, and if their removal is delayed they degenerate into cancer and quickly kill the patient.

Celiotomy for an uncomplicated ovarian tumor is one of the easiest and simplest operations in surgery.

The extra peritoneal method of removal of fibroids in expert hands has become one of the most feasible, successful, and safest operations in surgery. The pedicle as made by Dr. Joseph Price is quite small, not larger than the thumb; remains aseptic, mummifies and dries up without suppuration. Yet the intraperitoneal method of treating the stump with ligation of ovarian and uterine arteries, with apposition and suture of the peritoneum over the stump, has been successful in the practice of Baer, Kelly, and others.

Hemorrhage and leucorrhea from the endometrium after the "menopause" are highly indicative of carcinoma (other factors being eliminated), and especially if a cancerous diathesis exists; a mother, sister, or aunt having had cancer is justifiable ground for vaginal hysterectomy, though no other diagnostic symptom is present.

Specimens examined in the past from former cases proved the presence of incipient and insidious cancer of the fundus. One hundred and three supravaginal hysterectomies with seven deaths, and sixty-six vaginal hysterectomies with three deaths, prove these statements in the practice of Dr. Price.

No case of ectopic pregnancy should be allowed to die for want of section in this day and time, even in rural practice. While the physician can not make the diagnosis *per se* in every case, yet there will be enough symptoms present urging and demanding section as a conservative, life-saving measure. The wise and able physician will make the diagnosis and operate, or have a surgeon called and section done at once. Eighty-three cases of ectopic pregnancy, with only three deaths, by Dr. Price, prove most of the cases can be diagnosed and saved by judicious and timely celiotomy. Section for placenta previa, Dr.

Price states, is sublimely ignorant obstetrical counsel, or a criminal practice or suggestion.

Greig Smith states: Removal of the uterine appendages is performed for local disease in the ovaries and tubes, and has a three-fold purpose:

1. To remove organs incurably diseased, the ovaries and tubes causing danger to life or serious disability, abscess of ovaries and tubes, recurrent salpingitis with hematosalpynx and hydrosalpynx. Fallopian pregnancy and strangulated ovarian hernia endanger life; cystic disease of the tubes, ovaries, the more chronic and subacute inflammation of ovaries and their displacement cause disability in varying degrees.

2. To check or modify the discharge of blood from the uterus, it being excessive in amount, attended with danger or great pain. Uterine myoma is attended with profuse metrorrhagia, and cystic ovaries with profuse and uncontrollable menorrhagia. Incurable obstruction in the vagina or womb to the menstrual flow causes pain and danger; malformations and malpositions cause so much pain at menstrual periods as to render life a sort of recurrent martyrdom.

3. In a small and diminishing class of cases a profound neurosis mania. Mania or epilepsy may under very special restrictions be quoted as an indication to operation; yet even in these cases with a curious frequency disease of the organs is found at operation. The essential concomitants of these diseases must be of a grave nature; there must be danger to life or serious impairment of health before operation is contemplated. Six cases of mania were operated on for diseased appendages at Norristown Insane Asylum and Female Department by Dr. Alice Bennett and Dr. Joseph Price: three recovered their minds, and are at home sound and well; one greatly improved, changed from a dan-

gerous and violent maniac to harmless tranquillity of mind; one, hystero-epilepsy, no improvement; one died of septic peritonitis.

Several members of the Central Kentucky Medical Society have successfully done celiotomy for appendicular disease, intestinal obstruction, intestinal resection, and intussusception, diseased tubes and ovaries, suprapelvic hysterectomy and cystotomy, vaginal hysterectomy, ectopic pregnancy, fibroids, and ovarian tumors, and stab and gunshot wounds of the abdomen. Yet some specialists in the cities claim that abdominal and pelvic surgery can not and ought not to be done in the country districts, especially of Kentucky.

In doing an abdominal section the aim of the surgeon should be to save life, remove incurable disease, operate quickly, safely, and cautiously, and not to do an ideal operation, but economize time, minimize shock, lessen the stage of anesthesia, prevent hemorrhage, unnecessary extrusion of bowels, and protect them with hot aseptic towels, irrigate with hot aseptic water, and prevent complications, making all the details of the operation aseptic from beginning to end. Diagnose all tumors of the abdomen and pelvis early, and operate at once while the patient is in the best health, the tumor small, and before structural lesions have taken place in adjacent and remote organs.

Hindrances to the progress and success of abdominal and pelvic surgery have been due to the delay, ignorance, timidity, and abuse of opium on the part of the physician, he not sending the patient in time to the surgeon, and by the timid surgeon failing to operate and remove the lesions the operation demands.

Time waits for no surgeon! "Delays are dangerous." "Procrastination is the thief of time." Delay, ignorance,

timidity, opium, and dirt kill patients, and not surgical skill. The best time to operate is when the diagnosis is made, and made early. These aphorisms must be proclaimed here and in every medical society; yea, they should be proclaimed from the house-tops to the people.

In conclusion: The day of the ignorant midwife, the medical pretender, the incompetent graduate of second and third-class medical schools is over. The surgical millennium has come.

STOMACH WASHING IN INFANTS.

By Henry E. Tuley, M. D.
Louisville, Ky.

In offering the subject of "Stomach Washing in Infants" for your consideration I must apologize for presenting a paper which has already appeared in part in print, but which has not been read before a society.

Since the recommendation of this mechanical procedure by Epstein (Prague *Med. Woch.*, 1880, No. 45), of Prague, in 1880, irrigation of the stomach for the treatment of gastro-intestinal diseases of infancy and childhood has been gradually more extensively used. It was not, however, until his second report in 1889, at Weisbaden, before the meeting of the Natural Scientists and Physicians, that its real value became recognized.

To Dr. A. Seibert (Seibert, Archives of Pediatrics, December, 1888), of New York, is due its introduction into this country, who, at a meeting of the Section of Pediatrics of the New York Academy of Medicine in November, 1888, presented the first report, comprising a series of cases of acute dyspepsia, and of acute and chronic enteric catarrh with vomiting, in infants between seven weeks and one and one half years of age, which were successfully treated by lavage of the stomach with and without medication.

Though extensively used for the past four years in New York, comparatively little is known of it elsewhere in this country. The object of this paper is to call attention to this valuable measure, describe the apparatus, its applica-

tion, and briefly the indications for its use, with the report of a few cases, hoping that the Society will fully discuss the subject.

The apparatus used in infant stomach washing consists of a soft rubber catheter, No. 13 or 14, American scale, about twelve inches in length (that of Whitehall and Tatum is perhaps the best, not being as flexible as Tieman's, which is used ordinarily). This is attached by a bit of glass tubing two or three inches long, by means of which the contents of the tube can be noted as it flows through; and by a rubber tube to a glass or hard rubber funnel holding from one to three fluid ounces.

Plain lukewarm water, previously boiled, is the only material which should be used, generally not more than one pint being required to wash out the stomach thoroughly.

The child is seated upright in the nurse's lap, its arms being secured under a rubber sheet, with head resting on right arm of nurse and inclined slightly forward. With the left forefinger the child's tongue is depressed and the tube passed backward into the pharynx, advantage being taken of the child's gagging, which will occur from tittillation of the pharynx, to pass the tube rapidly into the stomach. In most cases no oil or vaseline is needed on the tube; it should simply be wet before its introduction.

There is often some gas in the stomach, and if water is poured in the funnel immediately upon the descent of the tube it is prevented from flowing into the stomach by gas in the tube and not by an obstruction at the eye of the catheter as one might imagine, a glance at the glass tubing sufficing to show whether tube is filled or not. This is obviated by elevating the funnel as high as possible, perhaps for half a minute, to allow the gas to escape. The

funnel is then depressed below the level of the stomach to allow its fluid contents to siphon out, after which the water is allowed to run in, one or two funnelsful, this being immediately siphoned out in the same manner.

There may be lumps of curds which at first are too large to pass through the catheter; these can often be broken up and dissolved by again and again letting water in and out until they pass readily through the tube; or if this can not be accomplished the child may be made to vomit alongside the tube by overdistending the stomach with water, thus bringing up oftentimes masses of curds leathery to the feel, and thick, tenacious mucus which would have taken repeated washings to disintegrate, if indeed that could have been accomplished at all.

The stomach of a healthy nursing infant for the first few months of life is generally empty at two hours after feeding—that of an artificially fed infant perhaps a little longer, say two and one half hours—but in cases of indigestion curds are sometimes washed out four or five and even eight hours after feeding, the period of stomach digestion varying with the character of the milk, the age and health of patient.

Should there be present considerable prostration and urgent thirst, as is often the case in acute processes, one or two ounces of water left in the stomach will relieve and quiet them, and the water will frequently not be vomited as it might be if given by the mouth, as has been shown in a series of cases of obstinate vomiting treated by gavage or forced feeding, reported by Dr. Charles G. Kelsey in the Archives of Pediatrics in 1892.

The *diet* after stomach washing and its method of administration is very important. *No food* should be given at all for at least two hours after the washing, and then only the blandest and most easily digested.

If the child be artificially fed, put it on "malted milk" for twenty-four or thirty-six hours after the irrigation, not giving more than half an ounce at the first feeding.

If a nursing infant, and breast-milk is vomited after the stomach is washed, malted milk is tried for twenty-four hours in small amounts and the breast-milk then resumed.

Epstein, after washing out the stomach, puts children on albumen-water (dissolve whites of two eggs in two pints of water, first beaten up in water then filtered) for twenty-four or thirty-six hours, and they are allowed gradually to return to the breast.

In the past two years in the New York Infant Asylum, where the statistics of this paper were obtained during my residence there, there have been fully fifteen hundred stomachs washed, and in no case has any evil resulted or any contra-indication been noted. It is very easily performed, though it seems like an operation of magnitude to those unfamiliar with its technique.

The following is a *resumé* of the history of forty-five cases of stomach washing during the midsummer months of 1891, records of which were carefully kept. The average age was ten and one half months.

Ten were fatal cases of entero-colitis, with high temperature, prostration, etc., and vomiting. Stomach washing effectually controlled vomiting in five case. Of the remaining five cases, in one the autopsy showed extensive ulceration of the stomach at the pyloric end; one had suffered from chronic vomiting from birth, and in three both gavage and stomach washing failed to control vomiting.

Thirty-two cases were of acute dyspepsia. In twelve of these there were intestinal symptoms, in six of which the temperature was above 100°. In all but one case from two to three washings were found necessary to control vomiting. In the remaining twenty cases, in which the

temperature was 100° or below, with the exception of two cases (requiring two washings) only one irrigation was necessary. Three were cases of chronic vomiting from birth, controlled with from one to three washings.

In all of the above cases the same precautions as to diet as related already were carefully carried out.

The following are illustrative cases:

CASE 1. Louisa F., a well-nourished child, fifteen months old, fed on Mellin's Food, with good gain in weight. In the afternoon of July 6th she was fed bread and Mellin's Food which had been standing uncovered in the hot ward. She soon after vomited once quantities of curds, and during the remainder of the afternoon had six thin and yellow movements. At 8 o'clock there was quite marked prostration, face drawn and anxious and quite cyanotic, with a temperature of 103°. Nothing could be retained, food causing gagging and retching when given. The stomach was washed shortly afterward and two ounces of warm water left in the stomach, which was not vomited. Quantities of fine curds were removed by the washing. After a two-hours' rest the child was fed on malted milk during the remainder of the night at intervals of two hours, only one ounce being given at a feeding. There was but one stool during the night and no recurrence of the vomiting. From this time the child went on to perfect recovery.

CASE 2. Joseph L., a robust, breast-fed baby, aged eleven months. Had made a rapid gain in weight. On July 23d his mother was away from the asylum on leave all of the day, the child in her absence being fed on partially peptonized milk. At 11:30 P. M. the mother returned, and the child greedily emptied in a short while both breasts, which were filled with milk. During the remainder of the night it vomited five times curds and sour milk, and had three thin and yellow stools. At nine the next morning

the temperature was 100°; its stomach was washed and quantities of sour-smelling curds removed. Two hours later, at its first feeding, one ounce of malted milk was given. During the afternoon the child was nursed as usual, with no recurrence of the vomiting. There were no subsequent symptoms, and child made good recovery.

CASE 3. Lulie J., a poorly-nourished, breast-fed child, seven weeks old. The evening of July 20th the child was reported as having vomited part or all of every nursing during the day, the ejected material being curdled and sour. Temperature was 100°, and she had had two normal stools. The stomach was washed, a few curds and considerable mucus being removed. Nursing was stopped, and after a rest of one and one half hours malted milk was given and continued until July 22d. During the night of the 22d she was nursed twice, and vomited after each nursing; stools good and temperature normal. It was again put on malted milk for twenty-four hours after stomach washing, the nursing being then gradually resumed. The child made a good recovery, and had no more vomiting.

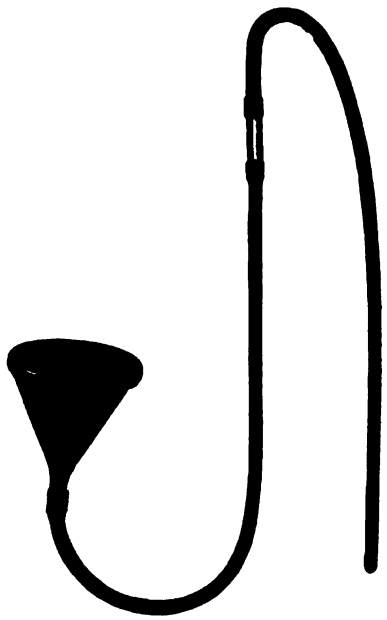
The best results in stomach washing are seen in cases of acute dyspepsia in the initial stage with or without diarrhea and with no fever. Rarely more than one lavage is required.

It is indicated in acute gastro-enteric catarrhs with vomiting and fever. Usually two washings are necessary, but rarely more than three or four. It improves the tone of the stomach and diminishes the number of stools.

It is a valuable and effectual means of combating a troublesome symptom in gastro-intestinal diseases, as it mechanically rids the stomach of milk and curds which accumulate there, and which, unless removed, would pass into the intestines and produce irritation.

It is of use in those cases which have vomited from birth or have had continual regurgitation of food, as it removes curds and thick mucus, which is nearly always present with disordered digestion. In some cases it may be found necessary to continue the lavage for perhaps two weeks, at first washing once each day, then every other day, and so on as required; but in the majority of cases vomiting is relieved in from one to three washings repeated on successive days.

Stomach washing is by no means a panacea in controlling this oftentimes troublesome symptom, nor does it pre-



APPARATUS REQUIRED.

clude other treatment. It is far better than emetics, the disadvantage of which has long been recognized in the treatment of indigestion of infants, and if properly done is a simple, effective, and thorough mechanical procedure,

and, so far as I have seen in a rather extensive experience with it, is entirely without danger.

In private practice there are some objections raised to its use, as to all new measures; but these I am sure will not be offered when once the great benefits derived from its application are seen.

DISCUSSION.

DR. J. C. CAVENAUGH: I rise simply to indorse the paper, and ask that the profession give it a trial. I saw some most marvelous results following irrigation of the stomach in 1889. I use it now in practice, and have been perfectly charmed with the result. It is a very simple measure. It may be used by the mother or the nurse with impunity.

DR. CECIL: I would like to ask the doctor if, in the use of the tube, he ever passed it or has known it to be passed into the larynx.

DR. TULEY: I have never seen it passed into the larynx. I have seen tyros attempt to introduce the tube, and always without difficulty; the only difficulty experienced was in the stomach tube's curling up in the mouth, but that was because the tube was a little too flexible. Any gentleman who has practiced intubation will readily see how difficult it is to pass an intubation tube into the larynx, and it is almost impossible to get a soft catheter into the larynx. It will readily pass into the esophagus.

ERGOT IN LABOR AND ABORTION.

By F. M. Greene, M. D.
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The art of obstetrics has kept fully abreast of all other branches of medicine, and we find that new modes and new remedies have taken the place of the old. Antiseptic midwifery has taken its place beside antiseptic surgery, and the accoucheur who now enters the lying-in chamber must observe all the rules of antisepsis, of which cleanliness forms an important part. Clean in his hands, person, and apparel, he will perform no operation nor allow any instrument to come into contact with the patient's body which has not been properly sterilized. It is of no less consequence that the parturient herself shall be clean in her bed and bedding, and a bath, to be followed by a carbolic acid or corrosive sublimate vaginal injection, must immediately precede her accouchement.

That cleanliness alone is not sufficient was proven less than half a century ago in the celebrated case of Dr. Rutter, of Philadelphia. Puerperal fever had followed in the wake of this distinguished obstetrician until he left the city in disgust, and was absent for some time. On returning to the city, and previous to visiting his patients, he had taken a bath, had his head shaved, and all his apparel made new. The very first patient whom he attended in her accouchement had puerperal fever. Dr. Meigs, his contemporary, would believe that the disease resulted "from the providence of God" rather than contagion

which might be conveyed by the hands of the physician. The case of Dr. Rutter marked a new era in the history of obstetrics, and notwithstanding his observance of the rules of cleanliness he labored under an ozena which may have been the source of infection. Semelweis demonstrated that puerperal fever was identical with septicemia, and was frequently conveyed on the hands of the accoucheur and attendants. Through antiseptic midwifery, maternities which were believed to be centers of contagion were made asylums of safety.

In the management of the different stages of labor we find as great a change. Not only many of the old-time remedies, as blood-letting and nauseating doses of tartar emetic, have been discarded, but the warm bath and ergot have in a great measure been laid aside, and are now placed in the limbo of obsolete remedies.

In this paper we propose to discuss the real therapeutic value of ergot in labor, and the conditions and treatment of those cases in which it has been supposed to be indicated. First, in prolonged second stages of labor, in which "the head being low in the pelvis, pains absent, and there may be danger in delay from hemorrhage or other complication," inertia is the most frequent cause of delay, and is itself dependent upon so many conditions as to be common in both multiparæ and primiparæ. Among them we recognize rigidity of the os, by which the first stage is greatly prolonged, malposition of the fetus, displacements of the uterus, multiple pregnancy, and hydramnios. Each of these conditions will require its appropriate treatment, and it must be rare that ergot would be required in any of them. In multiparæ there might be little danger, provided the parts are properly dilated and the labor so nearly completed. In primiparæ it would be hazardous, from the fact that we more frequently meet with delays at the outset

from rigidity of the perineum. If the complication be *ante-partum* hemorrhage, when the indication is to speedily empty the uterus, we have a better and safer remedy in the forceps, which are more under our command.

The objections to the use of the remedy are as follows: First, in the ordinary doses of one teaspoonful of the fluid extract it will often produce tetanic action of the uterus, which is at once beyond our control, and the labor unduly hastened, producing tears of some portion of the genital canal or rupture of the perineum. Those who have witnessed the sad results which have sometimes followed the use of ergot will appreciate this danger. Infant mortality under the use of ergot has been shown to be large, and Hardy, of Dublin Lying-in Hospital, found that in thirty cases of lingering labor in which it was administered, ten, or one third of the infants perished.

The dangers to the infant were two-fold. First, tetanic action, by which the regular rhythmical contractions are interfered with, and it perishes from asphyxiation. Secondly, through the maternal circulation it has a direct toxic effect upon the heart of the infant. The recent experiments of Hemmeter, of Johns Hopkins University, Baltimore, have thrown great light upon the physiological action of the drug when given in minimum doses, and upon the result when given in toxic doses. These experiments were performed upon the lower animals, but established the following facts: Whether given *per orem*, hypodermatically, or injected into the venous or arterial systems, the results were the same. First, "it produces contraction of involuntary muscular fiber throughout the system." By contraction of the "arteries and arterioles it causes a rise of blood pressure; it reduces the number of pulsations of the heart within a given period, also the number of respirations; its action is central through the central nervous

system, and not peripheral." It was not formerly supposed that the noxious properties of the drug were so great as to have destroyed the fetus through the circulation of the mother, and the result was rather ascribed to pressure, either upon the fetal head in its passage through the pelvis, or upon the funis and placenta by continuous action.

As a substitute for ergot, and also the forceps in cases of delay from inertia, we have a simple means in pressure, both effective and of easy application. It may be used in the first stage, when the uterus is acting feebly, and toward the close of the second stage, when dilatation is almost complete. These difficulties were often met formerly by venesection, nauseants, the warm bath, and more recently the forceps. The indications for the use of pressure must be the same as for ergot and forceps, a proper degree of dilatability of all the parts. In cases of delay from rigid os or perineum it is even more effective when preceded by chloral hydrate or antispasmodics. This mode is not new, but has been brought prominently before the profession by Kristeller under the name "*expressio fetas.*" He claimed that with a capacious pelvis and proper dilatation the fetus might thus be expressed externally without the aid of contractions. In this connection I refer to the following case of *ante-partum* hemorrhage, which was treated successfully by Kristeller's mode of pressure. The notes are taken from my case-book, and more fully reported in the January number of the Medical News, of Philadelphia, for 1892.

Mrs. M. had advanced only to the beginning of her ninth month of gestation. A normally situated placenta was probably entirely separated by a fall, and the external hemorrhage which soon followed was not sufficient to produce the syncope and profound shock which ensued. Her symptoms were those of concealed hemorrhage. I was

called suddenly without knowing the nature of the case, and without an obstetrical outfit save ergot and a hypodermic syringe. A clot was turned out of the vagina; the os found open to the size of a dollar, membranes slightly protruding, and vertex presenting. Hemorrhage had now ceased, and a binder was drawn around the abdomen with firmness. After waiting a short time for my forceps, syncope was again threatened, when the patient was placed in position for podalic version, the bandage loosened and pressure applied with both hands over the uterus. The pressure was made, gently and intermittently at first until it brought up contractions, and the labor was soon terminated. The patient had already lost blood to a great extremity, and was thus saved from further shock from version or the use of the forceps.

The next indication for the use of ergot is in puerperal eclampsia, when convulsions have set in and pains are wanting. Inertia is not often a complication of eclampsia, and the uterus usually partakes of the general spasms. In these cases infant mortality must be great, from the intensity of the spasms or asphyxiation. Ergot could be of use only as an ecbolic, and the forceps or pressure are to be preferred. In comparing the old and new methods of treatment of eclampsia it is proper to state that its precise pathology has not even at the present time been determined.

In 1843 Lever called attention to the excess of albumen found in the urine of eclampsic women. We have also the theories of anemia and of hydremia, and of retention of urea and other substances in the blood. The older theory of the apoplectic origin of puerperal eclampsia has in a great measure been abandoned, and its "sheet anchor," the lancet, laid aside. There is perhaps no affection requiring greater discrimination in treatment than eclampsia in the

parturient. While each practitioner will be guided by his own favorite theory, absolute symptoms are not to be overlooked. Thus, throbbing of the carotids, coma, and cyanosis are best met as formerly by venesection. In weak and anemic patients with small pulse, and in whom the nervous and hysterical element predominates, we may more safely adopt the anesthetic or sedative treatment.

The late Fordyce Barker pleaded for the restoration of the lancet in puerperal eclampsia. Paget does not admit of its dependence upon albuminuria, and treats it antiphlogistically. Viet and many other distinguished obstetricians treat it by prolonged narcosis. The first indication must be to rescue our patient, if possible, at once from the existing congestion of the brain and spinal centers, and this may be accomplished more speedily by venesection than any other means. Nor should the fact that the third stage must be accompanied by the loss of more or less blood deter us, since we have so many means of controlling this form of hemorrhage.

The two remaining conditions in labor in which ergot may be indicated are retention of placenta and *post-partum* hemorrhage. As the latter is so frequently dependent upon the former, they will be treated of together. The causes of retention are recognized as irregular or hour-glass contractions, abnormal adhesions, and simple inertia. There could be no indication for the use of ergot in abnormal adhesion, since for detachment and removal of the placenta the hand or curette may be required. Irregular or hour-glass contraction may doubtless be sometimes produced by ergot by causing contraction of the lower segment of the uterus as far as the internal os, which is constricted, and the fundus is unable to contract, owing to the presence of the placenta. Since placental delivery has elicited much interest lately, and has been termed a miniature

labor of itself by some, it will be proper to refer to its natural mode of delivery, as when accomplished by contractions of the uterus alone.

In muscular, healthy patients, with the uterus acting vigorously, careful observation, I think, will show that the placenta is for the most part partially and sometimes wholly detached by the last contraction which expels the fetus. If hemorrhage occur in the least quantity or at all, unless it proceed from tears of some part of the genital canal, it is an indication that the placenta is at any rate partially separated. It was the rule of the older obstetricians to wait, unless the hemorrhage was alarming, until the uterus again arouses itself to action. If there was no hemorrhage, the time which we were to wait varied from one to two hours. No stage of labor can be of greater importance, since the life of the mother will often depend upon a correct management of this stage.

We leave to the physiologist to determine the precise mode of the detachment of the placenta, and as to whether the process begins centrally or peripherally, but the *time* of its separation is of great importance. Bourdelocque, Tarnier, and others taught that "it sinks to the os by its own gravity" and "presents first by its fetal surface." Observation shows that it frequently presents first at the os by its maternal surface, when left to be expelled by contractions, without the aid of artificial measures. Traction upon the funis, especially before it has left the uterine cavity, would cause the former presentation, and it is doubtless often caused in this way by attempts of the accoucheur to remove it *vis a fronte*. Preternatural shortness of the funis or coiling around the fetus is sometimes a cause of dystocia, and I recently witnessed a case in which it was dragged externally by the fetus, and an alarming hemorrhage immediately followed.

Post-partum hemorrhage is regarded now as a preventable accident, and in every case in which hemorrhage has accompanied or immediately followed the birth of the child we should proceed to its delivery, after having cared for the infant. If there is no hemorrhage, I see no reason, as Milne, of Edinburgh, terms it, for "waiting around the lying-in chamber two or three days for the expectant cake to turn up." If adherent, it is not probable that time or ergot will expel it, and the latter might seriously embarrass the introduction of the hand or instrument for its removal. The mode by pressure will often be found to succeed, and especially if the placenta has been partially detached. This mode by pressure, now called Crede's mode of expression, has recently caused much discussion between his followers and those who adopt the expectant plan.

The difference of opinion probably arises from a misunderstanding on the part of the latter of the real mode of expression. Ahfeld, Cohn, and others oppose the mode, and contend that it absolutely favors *post-partum* hemorrhage, and would lengthen the interval between the second and third stages of labor. I do not think the charge that this is forced delivery is just, since by these means the uterus itself is simply induced rather than made to expel the placenta. It is from inertia that we so often meet with delays in delivery of the placenta, and it comes on at a most inopportune time, when the placenta has been partially detached and the uterus remains suddenly relaxed and quiescent.

In all cases of lingering labor, or in which hemorrhage may be anticipated, the pressure should be commenced before the birth of the infant, and at any rate during the last contraction which expels the fetus. It is important that an intelligent assistant make the necessary pressure at this time, and that it should be continued afterward for

some time, for the reason that frequently while our attention is taken up with the child alarming hemorrhages occur.

Lastly, we come to consider the use of ergot in abortion, and preface our remarks with this text from Prof. Engelmann, "Ergot should not be used in abortion until after the uterus has been emptied, and as long as the ovum or any of its parts remain adherent *in utero*." In the treatment of abortion, when it has been decided that the ovum must be lost, there are few practitioners who will not continue to regard ergot as a most valuable remedy in many cases. As long as we may hope to preserve the ovum, prophylactic measures are of the utmost importance, and ergot, on account of its ecbolic character, should not be given. Rest, opiates, chloral, the bromides, and especially viburnum prunifolium, are valuable only as preventive measures.

Inevitable abortion must be met by more active treatment. Whether it occur during the first trimester, and before the period of placental formation (abortion proper), or during the second trimester (miscarriage), or after the fetus has become viable (premature labor), the process must be completed as soon as possible, and temporizing measures are no longer indicated. There are perhaps no cases more trying to the patience and skill of the physician than these cases of early abortion.

The difficulty of ascertaining the precise condition of the ovum may be very great and not always determined by the most careful examination. When the hemorrhage has been considerable, and is accompanied by rhythmical contractions of the uterus, the patient will generally abort.

A distinguished obstetrician, Dr. Meigs, of Philadelphia, taught in his lectures that, as a rule, if a woman who is pregnant lose a teaspoonful of blood from the uterus she will abort. While with many this may be true, experience

teaches that a much larger quantity is lost and the ovum sometimes preserved. The uterine sound has been frequently introduced into a pregnant uterus, and the ovum afterward preserved. Many distinguished gynecologists treat abortion in the earlier months precisely as they would treat abnormal growths or tumors. The indication with them is to clean out the uterus at once, whether the foreign substance be a polypoid, decidua, or thickened placental tissue.

The average practitioner will perhaps continue to adopt the expectant plan in many of these cases of early abortions. If before the period of placental formation, and the hemorrhage be threatening, and we can not explore the uterus with the index finger, there are two modes which we may adopt to produce proper dilatation, the sponge, tupelo, or sea-tangle tent, or rapid dilatation by the Steele dilator. I have always been disappointed in the use of the rubber bag or colpeurynter to produce dilatation. The vaginal tampon seems peculiarly well adapted to these cases, and if ergot be given immediately after its introduction it will rarely disappoint us, both in controlling hemorrhage and in producing sufficient dilatation.

The most troublesome cases occur during the second trimester, where after the ovum has been discharged the placenta and membranes remain behind. At this early stage of its development the placenta is not easily removed by contractions alone, and should we adopt the expectant plan we submit our patient to all the dangers of septicemia. Ergot might control hemorrhage by closing the uterus, but could not cause the placenta to be discharged, and if continued would cause the case to be prolonged indefinitely.

In any case where the finger or hand may be introduced it would be better at once to remove the placenta, secundines, and all *debris*. The old-time remedies, rest, time,

and laudanum, will not answer here, and modern gnyecologists do not hesitate under proper antisepsis to remove the placenta with the curette.

Modern antisepsis has thus rendered operations harmless which were formerly regarded as extremely hazardous. After the seventh month (premature labor), when the uterus will admit the introduction of the hand the tampon and ergot may be both contra-indicated, as by the former sufficient blood may be dammed up in the uterus as to prove fatal, and by the latter the placenta may be imprisoned, and especially since at this time it is detached with greater difficulty. Pressure, which is not so available during the first and second trimester, may now render valuable assistance, and even supersede the use of the forceps, ergot, and other ecbolics.

Finally, in the administration of ergot I call attention to the conclusion of Shatz in regard to the physiological action of the drug: "The action of secale begins fifteen minutes after its administration by the mouth, and is greatest in thirty minutes. The effects of a dose last for one hour only, and the drug must therefore be repeated hourly." It will thus be seen that the ordinary dose of one teaspoonful of the fluid extract, and repeated every fifteen minutes, will in most cases produce tetanic action of the uterus, and is therefore too large. Recently I had sent me a preparation known as ergotole, and which I found effective in doses of eight to ten minims *per orem.*

DISCUSSION.

DR. JENKINS: It seems to me that in labor ergot is a medicine we can well do without. Artificial labor can be produced without ergot in a better physiological manner than with it. The drug often produces those threatening contractions dangerous to both child and mother. Hot water and thorough

douching will accomplish all that ergot will do. If you have a patient who is exhausted and almost comatose from hemorrhage ergot will seldom act; the uterine fibers are too much exhausted for it to act upon them; if ergot acts at all in such a case, it takes too long a time. Hot water or heat applied there and thorough cleansing will much more rapidly produce the stimulation. As to ergot in puerperal eclampsia, I can not see that it has any office. In an experience of five cases of puerperal eclampsia the spasms were not stopped with the expulsion of the fetus; they continued until stopped by other means, so it would not seem that ergot is likely to accomplish any thing in such cases. It is more rational in cases of inertia or misposition of the child or hemorrhage or other exigencies demanding immediate attention to deliver by forceps. In hemorrhage ergot often causes the retention of a hard blood clot in the uterus to give subsequent trouble. In cases of inertia ergot is likely to injure both the child and the mother. The forceps extract rapidly, and their action can be completely controlled. If version or any other obstetric operation is to be done, ergot will certainly interfere with it. Every city physician knows the great mischief done by midwives in the use of ergot during the first and second stages of labor. The intense contraction of the womb thus induced does often serious damage to mother and child. I am against the use of ergot either before or after confinement.

DR. SWOPE: I heartily endorse a good many of Dr. Greene's remarks; but I can not agree with the gentleman who has last spoken to the effect that ergot should be entirely abolished in obstetric practice. I think that ergot has its place, and that the place will continue to be occupied. I do not believe in the indiscriminate use of ergot, and yet I feel certain of its good effects in many cases. The author speaks of the inability of the system to properly take up the ergot at certain times; when this is the case we have a soluble preparation which may be given hypodermically, and which will certainly be absorbed.

DR. YAGER: I have found ergot useful in helping me out in many hard cases of labor. I am sorry to see so much discussion about doing away with that valuable drug. We older

practitioners, at least, have used it so long, and have acquired such confidence in its usefulness in bringing about happy results in the termination of labor that we would be loth to part with it. In cases of uterine inertia, the parts below being dilated, or dilatable, nothing is better than a dose of quinine followed with ergot; the two together work hand in hand. I must contend that ergot is useful in proper cases. And I can not but think that its power for harm has been exaggerated. If any member of this Society has lost a case in midwifery in consequence of the administration of ergot I have never heard of it.

DR. GREENE: I would add that I, like Dr. Yager, was raised under the old rule of the administration of ergot, and taught to use it on many occasions; and that I have abandoned it simply from the fact that we have other remedies which are better, and which can be at once resorted to—for instance, the forceps and pressure. I seldom use ergot now where formerly I was taught to use it, in inertia, when I have reason to believe that the birth will take place in fifteen or twenty minutes. The trend of my paper was to show that the use of ergot under these circumstances is dangerous, and that we have better means. The purpose of my paper was not to exclude or ignore ergot entirely, but to show that it might be supplanted by other and better measures—the forceps and pressure. Upon the subject of pressure I emphasize the treatment of Kristeller. In many cases it was the old method of obtaining uterine action in inertia.

THE CARE AND CONSTRUCTION OF THE MODERNIZED OUTFIT.

By August Schackner, M. D.
Louisville, Ky.

The time allotted me is so short that in place of reading a paper on this subject I thought I would consume the whole time in exhibiting and going over the features characteristic of the case. There are a few features here that are somewhat original and advantageous, to which I will call your attention. What I have here is a complete general operating case. It contains all the instruments necessary for any operation excepting necrotomy. The instruments are also so arranged and placed as to be kept in a perfect aseptic condition without any trouble whatever. I carry on the outside in this roll operating overalls. In addition to that there is also sufficient room here for slipping underneath a rubber sheet to place upon the table to make it impervious. The overalls are made of ten-ounce ducking, and are of one piece, entirely closing behind. This constitutes the suit. It completely covers the operator; it can be sterilized after each operation by boiling; it has arms to the elbows. At first the ducking seems entirely too heavy, but I would always advise you to get ten-ounce ducking, because each washing makes it softer, until finally it is about as pliable and soft as cotton would be.

One feature of the case is that every possible space has been employed. Upon half of the lid we have five bottles. In this I carry tincture of digitalis, an etherial solution of

bichloride of such strength that four drops represent one grain. Upon this bottle I have a formula for rapidly making solutions of bichloride of any strength desired. In the next bottle I carry sal soda to sterilize instruments and to keep them from rusting during boiling. The next bottle contains permanganate of potash, and the next oxalic acid, with which to sterilize the hands. Next is a small box containing needles, fifteen strands of silk-worm gut, and enough silver wire for one abdominal suture. In the next box I carry a tourniquet, which is completely isolated, and if it should be applied to an aseptic case it would be on its return into the box entirely isolated from any other part of the case or instruments.

In the next box I carry two sets of safety pins, two dozen each; in the next I have a duster for carrying the dusting-powder; in this case it is boracic acid. In the next bottle I carry iodoform gauze upon a roll, that I can pull out and take from it as much as I want without contaminating the rest of it, and place it back again.

I have been using for preparing the operation field soft soap, green soap; but lately I have been experimenting with the pure castile-soap shavings, which I think will clean the surface equally well, and will not, as I have frequently noticed, in preparing poultices for the operative field in abdominal surfaces, where soft soap is used, which contains so much potash, act as an irritant to the skin. Again, the soft soap is not always perfectly neutralized; either there is too much linseed oil in it or too much potash. Upon the other side of the lid I carry the mouth-gag, nail-brush, and razor. The razor is also placed in a little ducking case, so that as soon as it becomes dirty it can be washed and sterilized by boiling, the same as the rest of the outfit. In fact, every thing connected with this case is capable of being sterilized by heat; that is one feature that I have aimed at.

This is the mouth-gag that I carry, and for a nail-brush I use the cheapest nail-brush I can buy, one that costs me at the rate of fifty cents a dozen. I use it once and throw it away. I think it is much better to buy nail-brushes at five cents apiece, and throw them away, than to pay thirty-five cents apiece for them, and carry them for two or three months, and have them become septic and infected, which it is almost impossible to avoid after a nail-brush has been used a few times. The nail-brush also has another case of ducking, and also can be sterilized by boiling.

In this bottle I carry very fine, pure rubber tissue, and also on the outside a rubber dam for my drainage-tube. Have the rubber dam already cut with a hole in the center for the drainage-tube, and four openings for draw-strings to draw it together and pack it up with sublimate gauze; and in addition I have on the wooden reel more rubber tissue to cover the wound in the final dressing. I carry here rubber drainage-tubes of different sizes, and in this I carry decalcified drainage-tubes. I have but one more compartment left. In that I carry a twenty-five-per-cent solution of boro-glyceride.

When you can not place away your instruments yourself, and have to intrust them to trained nurses or to others who are not careful, or do not understand exactly how to place them away, very often the box may become soiled or infected; and in fact I have seen some very unsightly operating-bags, but I have thoroughly protected this case by the use of a shell on the inside. I have two shells like this one that is exhibited, and as soon as the one becomes dirty I substitute the other. The shell stands of itself, and fits very snugly the inside of the case. When every thing is in the flaps are drawn over. Of course the shell is supposed to be full, and covers every thing up.

The disposal of the instruments has caused me a great

deal of study. I have put a great deal of time on this, and I think now I have got the question finally solved. Every thing I have in this box is metallic or glass, with the exception of the handle, and therefore it can be subjected to heat. I can throw boiling water in this case and sterilize the whole as it is. I use this pan as an immersion pan if I am called away from the infirmary. It has no corners. Place a brick on each side, and with a spirit-lamp you can sterilize very readily. The instruments are disposed upon two frames, one resting upon the other. That is the first frame that I now show you. I carry two drainage-tubes, Hayes' saw, bone instruments, knives of various sorts, retractors, and hemostatics. The second frame is provided with a little shoulder, upon which rests the top of the frame.

You will notice that the instruments have been used from time to time very frequently, and you will see that they are a little brighter than it is customary to see them; but there is only one way to keep instruments bright as these are now. It is impossible to keep instruments highly polished by simply rubbing with any rouge you may employ. The way I keep these instruments bright is by means of a small jeweler's buffing lathe, which can be purchased for a few dollars. With that you can always keep your instruments at a very high polish. The large box has no corners. They are filled so that it may be thoroughly cleaned.

In this glass jar ligatures are carried, etc., which I sterilize and keep in solution. In this long jar I have sponges and any dressings I may want to use. This is the irrigating apparatus for irrigating the interior of the abdominal cavity. I have this case for carrying the anesthetics.

Here is the ligature reel. This is another thing I have devoted a great deal of time to, and I think now I have

got a ligature reel that fulfills all the indications and requirements. You see I carry nine different sizes of silk and catgut. These are arranged in the manner I indicate. The center piece projects into the ligature reel, and from the center piece I have side pieces going out, holding reels of different sizes to correspond with the character of the ligature material they are supposed to hold. In the largest I have braided silk for tying off abdominal tumors, and in the next I have the second size of silk for smaller tumors and adhesions. Then I have very fine silk for intestinal work; and I have three different sizes of catgut, and two strands of each size.

Some of the advantages that I claim for this case are that it is complete, contains all the instruments necessary for any emergency operation, and the instruments are so arranged and disposed that they can be very readily rendered aseptic and kept so. I have seen operating cases which either did not contain sufficient instruments or contained entirely too many; the instruments were too cumbersome; and also the instruments and apparatus were so arranged that they could not be kept and carried in a perfectly safe condition. Now after the operation these instruments here are sterilized by boiling in soda solution and placed away. I have used them in abdominal work without any further sterilization, and have used them without any trouble whatever. But in order to make things doubly sure I always, if I operate where it is convenient to do so, sterilize them again before commencing the operation, so they are sterilized before they are put away, and then sterilized also before an operation is commenced, and in that way I am certain of getting absolutely sterile tools to work with. This ligature reel I have been using for some time. I have used this charge of silk and catgut in four sections, and have had no infection or any thing suspicious

whatever to follow. The ligatures are sterilized by immersion in absolute alcohol; then the whole of the ligature reel is plunged in boiling water, and kept at the boiling temperature for five minutes. Next day this is repeated, and by this fractional sterilization I am certain that I get absolutely sterile ligatures. I also carry in the hypodermic case a syringe that I keep only to go with this case, and tablets of atropine, strychnine, nitroglycerine, and morphine.

DISCUSSION.

DR. E. E. HUME: What is the cost of the apparatus?

DR. SCHACKNER: I have not figured up exactly the cost of it. I spent a good deal in experimenting to get it to this stage. If I were to make another I could do it much cheaper. Some of the instruments are imported, and some were purchased in Louisville and some in New York, and in that way were collected from different parts of the country and at different times, so I could not exactly answer the question intelligently.

DR. CARPENTER: The apparatus seems to be perfect as far as it can be made aseptic; but a man who is doing general surgery, abdominal and pelvic work, I think ought to have a different set of instruments for each kind of work. If he is going to do abdominal and pelvic work he ought to have instruments for that especial purpose; and then doing abdominal work, doing the best work, do that alone. Most bad results come from trying to do general and pelvic work; and I do not think we should run promiscuously into an outfit for all kinds of work.

DR. SCHACKNER: I think the argument is against the man and not against the case. You can put in the case what you like; you can take out your general instruments and confine yourself to abdominal instruments, or you can do *vice versa*. The instruments are sterile, and that does not argue any thing against the instrument case at all; but if any fault is to be found, it must be on the part of the operator carrying the infection otherwise, and not through the instruments.

SPLENECTOMY FOR SCIRRHOUS CARCINOMA; DEATH FROM SHOCK.

By Harry J. Cowan, M. D.
Danville, Ky.

On February 17, 1893, I saw, with Dr. H. Brown, of Hustonville, Mrs. L., white, aged ——, the mother of six children; menstrual life regular. There was no history of important sickness prior to about February, 1892, when she began to have severe pain in the left hypochondriac region. This pain would last for several days, sometimes as long as a week, and then recur at intervals of about two weeks. She had been confined to bed for two months, was emaciated, and had an anxious expression. The exertion of sitting up for examination caused free perspiration. The appetite had remained good, except when the patient was taking morphia. Eight months previous to my visit she had observed a small "cake" below the free border of the ribs, on the left side of the abdomen.

A firm, immovable tumor occupied the left hypochondriac and lumbar regions, extending upward beneath the ribs, inward to the right of the median line, and downward into the iliac region. A line of tympanitic resonance could be heard over its anterior surface a slight distance below the free border of the ribs; there was resonance low down in the loin behind. The examination revealed no evidence of other disease.

In the consultation diagnosis of tumor of the kidney or spleen, most probably malignant disease of the spleen, was made, and operation advised.

Operation March 9th, Drs. H. Brown, George Cowan, Moore, Alcorn, and Humphries being present and assisting. Incision in the left semi-lunar line; omentum adherent both to the abdominal wall on the anterior and inner surfaces of the tumor. Obscure fluctuation was felt, and the tumor aspirated without result. As the adhesions were being separated the colon was seen overlapping the growth and bound down to it by adhesions. Upon enucleation the diseased organ proved to be the spleen. The pedicle was isolated with some difficulty, due to omental adhesions in the hilum, grasped with forceps, and, after removal of the tumor, tied with three interlocking ligatures, reinforced behind with a Staffordshire knot; abdomen flushed, drained, and closed. Time of operation, one hour and fifteen minutes. Patient died from shock three hours after.

The spleen was estimated to have weighed twelve or fifteen pounds, and was largely made up of a yellowish, semi-solid material in three distinct foci, between which there was apparently normal splenic tissue. The capsule was nowhere broken, and none of the adjacent organs involved, so that the case was a favorable one for operation.

A part of the specimen, consisting of the smallest focus of disease, together with some surrounding normal tissue, was examined by Dr. Louis Frank, of Louisville, who kindly sent me the following report:

LOUISVILLE, KY., March 28, 1893.

DEAR DOCTOR: The spleen sent me for examination proves to be very much decomposed, but was nevertheless put in alcohol and cut, giving by microscopic examination the following:

Splenic (?) tissue so decomposed as to be not easily analyzed, but showing no apparent deviation from normal, except in the capsule, which is thickened and the seat of the carcinoma. This cacinomatous tissue is at the seat of a large, soft, puffy mass, observed microscopically at the edge of the tissue. The

basement tissue of the cancer is dense fibrous tissue, between which the cancer cells are infiltrated.

Diagnosis: Scirrhous carcinoma (of capsule) of spleen, probably metastatic. Respectfully,

LOUIS FRANK.

Splenectomy for disease is attended with a high mortality, the deaths being from hemorrhage or shock. Prior to Péan's successful case in 1867, which was done for cystic disease, there were on record three authentic cases, the patient in each instance dying from hemorrhage a few hours after operation. Mr. Wright, of Manchester, has collected sixty cases, twenty-two for leucocythemia, all fatal; twenty-three for simple hypertrophy, with fifteen deaths; seven for malarial disease, with two deaths; and three for cystic disease, all of which recovered. Ashurst reports forty-three cases, to which he had references; thirty-one of these died.

Leonard gives a table containing all reported cases of splenectomy between 1881 and 1887, seventeen cases, twelve of which recovered and five died. In commenting on this table he says: "It is possible, however, that all the fatal cases have not been reported. Thus Mr. Tait refers to two instance within his knowledge in which hypertrophied spleen was mistaken for ovarian tumor, and the operation for these supposed cysts terminated fatally in both instances, no report of the mistakes ever being published. . . . In the discussion which followed the report of Crede's case before the German Surgical Society, six other cases were mentioned by different operators, with but one recovery."

From Sajous' Annual I have collected eleven cases, reported from 1888 to 1891 inclusive; seven recovered and four died.

Mr. Greig Smith, after a review of the literature of the subject, sums up as follows: "Operations for leucocythemic

spleen are unjustifiable. Operations for traumatic lesions are justifiable and safe. . . . For cyst the spleen may be removed with a fair chance of success, but puncture or incision with drainage should have a trial first. In the early stages of malignant disease the operation is justifiable."

DISCUSSION.

DR. W. C. DUGAN: In regard to the diagnosis of Dr. Cowan's case, I should say that a spleen weighing ten or twelve pounds would rather be against the idea of a scirrhus; and if it had been scirrhus, I do not think we would have found the patient in such a condition as was described. I would therefore be rather disinclined to confirm the diagnosis. The specimen was in rather a macerated condition when Dr. Frank received it, and that would make the diagnosis more difficult.

DR. COWAN: There may have been a mistake in diagnosis, although the spleen was put in a chloral solution, for, as he says, the specimen was rather decomposed when it reached him. But it seems to me that leucocythemia is not in the history. There is no history of hemorrhage nor long wasting illness nor elevation of temperature—nothing that drew any clinical attention to the case, except that one single symptom directed to the left hypochondriac region, beginning with pain and ending with the formation of a tumor. Every thing pointed to that region alone from the beginning to the last; then, in the absence of other enlargements of the glands, in the absence of the history of hemorrhage or fever, we could positively exclude leucocythemia without any examination of the blood.

MANAGEMENT OF DAMAGED INTESTINE IN STRANGULATED HERNIA.

By H. Horace Grant, A. M., M. D.
Louisville, Ky.

With reference to taxis in strangulated hernia, I take it to be pretty well settled, in view of the safety of present surgery and the satisfactory results of recent operations for radical cure, that the theoretical treatment of all hernias, certainly strangulated, should be operative. The various accidents and dangers of returning uninspected an intestine subjected for an uncertain period to an unascertainable degree of constriction, and to an often unknown amount of manipulation, do not need recalling. Practically, however, such treatment is not always applicable. Still it is not extreme to say that all hernias, certainly strangulated, twenty-four hours even without vomiting; all hernias, certainly strangulated, in which vomiting comes on late after pain and obstruction, as indicating constitutional rather than local influences; all strangulated hernias in which vomiting has occurred that have been manipulated; and all strangulated hernias in which the symptoms of collapse are appearing, should receive operative treatment at once. In recent hernias in all situations, and particularly the femoral, this obligation is even more imperative.

To be practical, there arise at the operating table two sets of questions: (1) Have we a dangerously damaged gut? (2) If the gut is dangerously damaged, shall we temporize, make an artificial anus, or resect?

As to the first question there must always be uncertainty, but that uncertainty involves great danger. Treves, in his late work on Operative Surgery, page 523, recommends that the "doubtful bowel" be returned to the peritoneal cavity. Whenever there is enough doubt about the condition of the gut to be termed "doubtful," I am convinced it should receive different treatment altogether. It is impossible to decide in some instances by either the appearance of the gut, the duration and tightness of the constriction, the history as to vomiting, or the constitutional condition, whether the gut will recover, nor is the apparent restoration of color and circulation always a reliable guide.

Superficially the color may appear normal while necrosis has already begun in the deeper tissues. I offer an illustrative case:

CASE I. A man, aged thirty-four, admitted to the City Hospital February 18, 1893, at 12 M., with a large tumor of the scrotum. From the patient it was learned that the hernia was an old one, never before strangulated, had been down four days; taxis had been done outside the hospital by two physicians without result; no action from the bowels for four days; pain inconsiderable, and no vomiting. There was no impulse on coughing; taxis by the house surgeon was without effect, and hot applications were made.

During the night the patient vomited two or three times and complained of pain. I saw him at 10 A. M. on the 19th. A tumor of the size of a small cocoanut was found; normal temperature, pulse 80. Immediate operation, without taxis. The sac, somewhat discolored, was filled with a dark red serum. The colon, vermiform appendix, and ileo-cecal valve presented. The constriction was very tight, the bowel greatly discolored, and presented

on the colon two black patches each of the size of a dollar. The constriction was divided and the mass covered with cloths wrung out of hot water changed every five minutes for an hour.

At this time the normal color had almost perfectly returned, the black discoloration was quite gone, and the circulation seemed fully re-established. Under chloroform the constriction was freely divided and the tumor returned carefully, a drainage-tube put in, and the wound left open. General peritonitis developed on the third day, and at the autopsy Dr. Rodman and I found the whole mass in an inflamed condition, with two spots ready to slough, but no perforation. To have made an artificial anus or to have done a resection would in this case have involved removal of the head of the colon, and the formidable operation was not to be undertaken in the surroundings.

Plainly, the danger of septic peritonitis is almost as great as that of perforation, and so long as any question of the vitality and aseptic condition of the viscera remains it should be kept out of the peritoneal cavity. If the gangrenous portion is omentum and can be cut away, the danger is thus removed.

CASE 2. March 14, 1893, I saw with Dr. Cochran and Dr. Kelly, of Louisville, Mrs. K., aged forty-two. She had a tumor in the right groin which had been irreducible for two years, but she had been suffering for two days with pain, intestinal obstruction, and occasional vomiting; the pain was severe. No more taxis was made than to verify the diagnosis, immediate operation. Sac at femoral opening was filled with dark red fluid and an omental tumor as large as the thumb, two inches and a half long, and becoming gangrenous and adherent. This was drawn out and tied off, and a healthy-looking bowel seen in the bottom of the wound. The omental stump was stitched to

the ring at the bottom of the wound, which was closed up without drain. Recovery without temperature or any sign of suppuration.

It appears that in these two cases strangulation and gangrene existed without much constitutional disturbance, and in the first the return of color was not a safe guide to the future treatment.

In future I shall return to the cavity only such of its contents as I am sure are living and aseptic. A little later a plan will be discussed for the treatment of doubtful intestine.

For the second practical consideration three plans of treatment are open: The temporizing, which should consist in free division of the constriction, excision of all septic-looking peritoneum, and the withdrawal of the intestine until sound tissue appears, when the bowel should be sutured through its outer layers to the abdominal wound, covered with iodoform gauze, and watched for two or three days, if necessary, to be safe. This method was first suggested by Rovsing and Graefe. If the bowel recovers, it is of course returned; if not, resection is done or an artificial anus is made.

With respect to the artificial anus it is always to be remembered that such a step is usually but preliminary to an always dangerous and difficult one of restoration of the continuity afterward, and is therefore only to be commended in an extremity.

Treves (*op. cit.*, page 524,) advises, in making an *anus præternaturalis*, that the stricture be left undivided, lest the protective adhesions be destroyed. Such a course must be unsafe in the extreme.

Lockwood reports thirty-seven cases of artificial anus made in St. Bartholomew's Hospital, London, in which a free incision was made into the tumor without the removal

of the diseased tissues, and usually without division of the stricture. Of these, thirty-two, or 88.57 per cent, died, presumably from arrested peristalsis and septic infection.

The method suggested by Poulsen is perhaps the best. He opens and irrigates the sac, divides the stricture, draws out sound bowel and fastens by sutures, as in Rovsing's operation.

When perforation occurs the open end is closed with Péan's forceps and kept protected with gauze. After a few days the protrusion is destroyed by thermo-cautery or scissors, and the enterotome is used to divide spur after Dupuytren's method. Poulsen reports three recoveries and two deaths by this method—a not very encouraging report.

It is found, after the incision of a gangrenous tumor and the establishment of the artificial anus, that, though there is a free escape of fecal matter, the pain and vomiting are not always relieved.

This is due to interrupted peristalsis in the upper part of the intestines and to beginning sepsis. If, however, the constriction is freely divided and all dead tissues are removed, the wound irrigated and made clean with gauze packing, the symptoms are usually relieved, even if fatal issue come later.

CASE 3. In December, 1891, I saw Mrs. C., aged seventy-four; small femoral hernia, strangulated three days, with usual symptoms. The sac was found gangrenous as well as the bowel. No separation of adhesions was made, and the bowel was not drawn out. Free discharge of fecal matter took place, but the patient continued to vomit occasionally, as well as to suffer some pain, and died on the fifth day after the operation of exhaustion.

CASE 4. I saw at 6 A. M., March 16th, Mr. G., of Middletown, Ky., who had been suffering from constipation and nausea, with some abdominal pain, for three days, but

continued about the house. On the afternoon of the 15th he took a dose of salts. During the night he was attacked with vomiting and very severe abdominal pains. He summoned at midnight a doctor, who found a tumor in the right groin about the size of a hen-egg. No taxis was made, but hot applications and opium were ordered.

I saw him at 6 A. M. The tumor was an old femoral hernia, usually reducible, for which no truss had ever been worn. It was tightly strangulated, and had been irreducible for three days. The patient was asleep, and had not vomited in four hours; pulse 72, temperature 98°. Immediate operation. Sac was filled with dark-red serum, which spurted out on section; sac was gangrenous and the bowel sphacelated and offensive. Two inches were drawn out, and healthy gut was sutured through serous membrane only to the healthy wound above the gangrene, then the bowel was split open. The patient recovered well from the operation without fever or pain, though he died from acute mania and voluntary starvation in the sixth week.

The third method of treatment, or resection, is of course the ideal treatment, when the consideration of the patient and the surroundings permit. In his abstract, above referred to, Lockwood arrives at a conclusion, from statistics, in favor of resection.

I have collected from the current literature of 1892, 1893, and private communication, reports of seventy-one cases of gangrenous hernia operated on in the three ways. The St. Bartholomew's Hospital cases are not included in these statistics. In fifteen of these cases an artificial anus was made, with five recoveries and ten deaths; in nine cases the temporizing method was employed, with subsequent return of the gut, four recoveries and five deaths, one of the patients who recovered having fecal fistula; of the forty-seven resections, twenty-two recoveries and twenty-five deaths.

Thus we have for artificial anus five recoveries and ten deaths, or thirty-three and a third per cent; return of bowel after it looked safe, four recoveries and five deaths, or forty-four per cent; resection, twenty-two recoveries and twenty-five deaths, or forty-seven per cent.

TABLE I.—*Artificial Anus.*

	Recovered	Died.
Ransohoff, Annals of Surgery, October, 1892, . . .	..	1
Poulsen, Annals of Surgery, January, 1893, ...	3	2
Sachs, Annals of Surgery, May, 1892, ...	1	6
Grant (unpublished)	1	1

TABLE II.—*Returned.*

	Recovered.	Died.
Ransohoff, Annals of Surgery, October, 1892, . . .	1	With fecal fistula.
Dugan (private communication), ...	..	1
Rodman (private communication), ...	..	1
Grant (unpublished), ...	..	1
Rovsing, Annals of Surgery, March, 1893, ...	1	2
Rovsing, Annals of Surgery, January, 1893, ...	2	..

TABLE III.—*Resection.*

	Recovered.	Died.
Habs, Annals of Surgery, May, 1892, ...	7	9
Sachs (rep. Kocher), Annals of Surgery, May, 1892,	10	15
Tillman, Annals of Surgery, June, 1892, ...	1	..
Ransohoff, Annals of Surgery, October, 1892, . . .	1	..
Duchamp, Annals of Surgery, January, 1893, . . .	1	..
Borella, Annals of Surgery, February, 1893, ...	1	..
Cartlege, Report of London Surgical Society, 1893,	..	1
Vance, Report of London Surgical Society, 1893, .	1	..

Of course these statistics are less valuable from the fact that many deaths from each method are not reported, and the doubtful successes from the first two methods are often left unpublished; but the resection statistics are of special value, as the work was done by a few operators, all skilled

surgeons, and most likely represent all their work at that date. The accompanying tables of reference are submitted. These forty-seven resections were done by eight operators, and indicate that under favorable surroundings surgical skill can do even more by the ideal method than by temporizing or compromising. The various methods of resection can not be discussed here.

I present to your inspection the clamp I have before described. With it I am able to make the resection in experimental cases in fifteen minutes. I have not yet perfected the mechanism of the instrument.

I conclude, from the review of the subject: (1) All doubtful gut should be kept out until the question is settled, for two or three days if necessary, under inspection. (2) That when the surroundings are favorable the experienced surgeon should resect the gangrenous gut, and after thorough antiseptic irrigation make immediate suture, unless the patient be very old, feeble, or in collapse. (3) That when the surroundings are not favorable, nor convenience and experience at hand, the dead tissues should be cut away, thoroughly irrigated, healthy gut drawn out and sutured and packed with gauze, with the view of closing the fecal fistula after two or three weeks.

INSOMNIA.

By Curran Pope, M. D.
Louisville, Ky.

The necessity for sleep and the intimate and important relation it bears to the preservation of health, and even life itself, surrounds the study of its phenomena in health and disease with an interest second to nothing I can recall. For ages philosophers, physiologists, and clinicians have vied with one another in endeavoring to solve its intricate problems, and to-day in insomnia we are confronted with a condition that begins to assume gigantic proportions. A close observer of the pulse of public needs and wants, the advertisements, will recall how many new sleep producers are weekly and monthly brought to notice. Even as I write a new hypnotic is on my desk and a politely written request from an enterprising firm requesting me to give it a fair trial at my clinic. Thus the ever-growing importance of a knowledge of how to preserve normal, healthy sleep and how to relieve sleeplessness becomes apparent to the most superficial of observers. An intimate knowledge of the sleep state is important, and I may be pardoned devoting a short time to a *resumé* of the phenomena of sleep. Knit up the ravelled sleeve of care and create one new day by day, is the wish of every human being. Sleep is needed by all; hence, insomnia may attack any one. Our daily life is one of wear and tear, whether it be at the desk or in the counting-room; before the bar of justice or at the bedside; or upon some pleasure

expedition or in arduous toil. A glance at a Ruben, Raphael or a Venus de Milo consumes our cerebral force, and not for a second of time is the brain inactive while awake. Thus every act of thought, every object viewed, every sound heard is a tax upon the nervous system. Work calls for repose, for rest. The nervous system rests only during sleep, and it can readily be seen that sound and healthful sleep is essential to the *bienfaisance* of every individual. The more we work the greater the need of sleep. The mind can only resist sleep up to a certain point, and soldiers frequently fall asleep in the saddle, and the writer remembers his total inability to resist the sleepy feeling stealing over him after a long and trying ride in Colorado; in fact, does not remember any thing that occurred during the last few miles of the trip.

The Causes of Sleep. This daily wear and tear produces by its tissue metamorphosis and chemical decomposition waste products that must be removed. This condition of "bankruptcy," so to speak, brings about a condition of lessened functional activity, the circulation becomes slower and slower, and sleep supervenes. Thus there is lessened function, less blood sent to and in the cerebral tissue, and its movement slower than in our waking moments. This condition is favorable for the repair of the brain tissue. The various functions are partially or totally abolished during sleep. The respiration and heart-beat are slower, due to lessened medullary innervation. The saliva, urine, and conjunctival secretions are less active. The special senses of sight, taste, smell, hearing, and touch are lost last.

Phenomena of Sleep. (1) Physical: The onset of sleep is gradual; a delicious feeling of languor gently steals over us; a drooping of the eyelid, the unsocial but truth-telling yawn are all pleasant forerunners of approaching sleep.

Upon retiring, in a short time we experience a feeling of inward supineness, enervation, and torpor; the limbs, head, and back partake of this general feeling and assume a position of relaxation and comfort. Soon kind Morpheus waves his wand and we are started on a pleasant journey to the land of nod. (2) Psychical phenomena of sleep are many. The sensorium, both special and common, becomes incapable of recognizing external impressions. That most wonderful attribute, the will, is abolished; judgment, reason, and perception are greatly weakened, while the emotions and imagination are retained, memory only partially.

The nervous system is quiescent, its many and diverse functions curtailed, reflex action less active, and the medullary centers of respiration and circulation slackened. Thus the work of the economy is carried on at the lowest possible expenditure of energy, its fires are banked, its oil cups shut off, its machinery still. "What most by day affects at night returns," and then "perchance we dream." At all times dreams are interesting, and a close analysis of the foundation of dreams will show that they are produced either by impressions made upon the mind at some period previous or produced during sleep by some bodily sensation and subjected to the unrestrained influence of the imagination. Persons do not feel rested after dreamy sleep. Dreams occur oftenest at the beginning and end of sleep. Even the most intellectual are affected by dreams in a manner that is surprising.

Insomnia is a want of sleep either in duration or depth. It is nothing more nor less than a symptom, and should indicate to the physician the necessity for a careful inquiry into the patient's condition. Insomnia may originate from one cause, and in its turn be a cause of grave diseases of the nervous system. It is a vigilance in the cerebral cells

initiated and maintained by a perturbing element. I know of no condition, unless it be that of constant pain, that causes its victims so much misery as insomnia. Sleep ranks as a co-equal with food and clothing for the preservation of life, and a man's power of work is in proportion to his ability to sleep. The causes of insomnia are many. Even an excess of light, noises of any kind are unfavorable to sleep. I know of no cause so potent for the production of this symptom as overwork. Constant strain and work produce an imperfect vaso-motor innervation, and dilatation of the blood-vessels follows upon the slightest provocation. Neurasthenia itself is nearly always accompanied by and frequently produces this trouble. Gout, rheumatism, lithemia, and dyspepsia are potent agents. Anemia may be a cause as well as a result of this disorder, while in shock, hysteria, and hypochondriasis this symptom is always a prominent one. Toxic agents, such as malaria, specific trouble, tobacco, cocaine, alcohol, chloral, and morphine often underlie persistent and intractable insomnia. The dangers of insomnia are great; general anemia, many nervous diseases, and insanity frequently originating in this distressing symptom.

Reflection always leads one to a cause more potent than any I have mentioned previously—the age in which we live. The American is naturally a quick, active, nervous individual, and the nervous diathesis is the prevailing diathesis of this country. He has a narrow margin of nervous force, and is always on the ragged edge of "nervous bankruptcy." He is never so happy as when whirled along in his vestibuled limited at sixty miles per hour. We rarely rest reasonably, and even when taking recreation we feel the need of that wonderful factor in the production of nervousness, the daily press. Think of the tax put upon an already busy man by being brought in daily contact

with the actions of governments, at home and abroad; compelled to study the fluctuations of far distant markets and feel the excitement incident to the change of political parties; the constant change of laws and new legislation, for in the morning paper, read with breakfast, we find the sorrows of the world, its joys and disappointments, and a nature but moderately sympathetic is consciously or unconsciously robbed of its nervous force daily, and sometimes twice daily, by this indefatigable power. Thus our mode of life and civilization, the excitement of Wall Street, the change in political parties, and the consequent disappointments, the varied uses of steam and electricity, higher education and scientific study, the excitement of religious revivals, the present social system, are all making us a nation of nervous people, and where nervousness is found insomnia invariably follows in its wake, like the shark it is. A careful examination of the entire system is of paramount importance. Reflex and diathetic conditions should be diligently sought for. The urine of every case should be examined, and in doubtful cases the blood. It has become routine with the writer to examine both. Early treatment is the most satisfactory, and it is to be regretted that so many patients fail to appreciate the seriousness of their condition in its early stages.

Treatment. (1) Hygienic: The room should be cool and contain plenty of fresh air, ventilation secured from above, and noises and light avoided. The last meal of the day should be taken at least three hours before bed-time. Diet should be varied, nicely cooked and appetizingly served, and meals eaten at regular hours. What should be eaten and what avoided depends upon each case, and must be left to the discretion of the physician. As a rule, cabbage, slaw, beets, asparagus, and rhubarb should be avoided or eaten in very small quantities. Few persons appreciate

the psychological effects of a pretty table, covered with clean linen, adorned by a piece of fancy work or a few flowers. Observation leads me to believe that this factor, so often neglected, is a valuable aid in treatment. Nervous people can and do appreciate the beautiful, and any psychical factor like this should be utilized. I tell my patients to remember this rule—masticate thoroughly and eat slowly, that satisfaction may precede satiety.

The clothing should be light and warm. A careful inquiry into their daily work and a regulation of the hours becomes a duty. Rest during the day—a nap after dinner of say twenty to thirty minutes, or simply reclining on a sofa—is beneficial. Exercise is less understood, I believe, than any other hygienic feature. Each case must be carefully studied. Horseback riding, bicycling, walking, lawn tennis, bowling, and gymnastics all have their places and peculiar uses. In this class of cases we individualize, as no rules can be laid down, but the amount must be specifically stated. The theater affords pleasant recreation. I prefer the light farces, comedies, spectacular and society plays, and frequently recommend them to my patients. Tragedies I consider of unquestioned disadvantage. Alcohol, coffee, and tobacco should be used in extreme moderation, or, what is better, interdicted completely. Judicious counsel and explanation may go far toward relief, and lightly laughing down a patient's statements of his symptoms, though they seem small and insignificant to us, is an evil fraught with danger.

(2) Hydro-therapeutical Treatment: I rank water first in the systematic treatment of insomnia. The methods I use are the shower, needle or rain, foot, half, full, Turkish, and sitz baths; the different forms and douches, some ten in number, the wet pack, and the hydro-electric methods of Hedley. The rain bath at 65° to 75° for two minutes,

from twenty to thirty pounds pressure, increases the appetite, steadies the heart, refreshes the nervous system, and gives general tone to the systemic functions.

The ordinary Turkish bath as given should be avoided as a producer of cerebral congestion. The sweating is best given in a sweat-box, the head being free; the body is thus subjected to heat, the head is cool (I use a coil cap in addition), and the patient breathes pure, cool air. This should be followed by a douche ranging from 105° to 160°, and reduced gradually to 60° or 50° F. Tissue change is promoted, cerebral congestion lessened, and a feeling of well-being produced. Of the douches, their application is as varied as it is valuable. In depression and anemia, the douche at 60° to 75°, pressure twenty pounds, for two to three minutes, gives good results. In using the sitz bath for derivative action a cooling cap should be applied. In the hydro-electric methods of Hedley a current of electricity is carried along by means of the water, combining thus the effects of the water and electricity. In all these modes of treatment precision is essential to success; the temperature, pressure, and duration should be prescribed as we prescribe any medicinal agent. The weight should be taken from time to time. After all methods rest in the prone position for ten minutes must be insisted upon.

(3) Electrical Treatment: General faradization has not yielded me the results I anticipated in this trouble. Central galvanization with weak currents (1–5 ma.) of short duration (brain, 1 min.; cr. sym., 1 min.; cilio-spinal region, 2 min.; spine, 2 min.) have been useful in many cases. The static current I consider the best. I use insulation and the head breeze, positive or negative, as the case may need, for five to ten minutes daily, and the direct static spark where revulsive effects are demanded.

(4) Mechanical Treatment: I have used mechanical mas-

sage with favorable results in some cases, especially in relieving the constipation accompanying these cases. In conjunction with hydro-therapy and electricity it is a valuable agent. Lately Prof. Charcot has called the attention of the profession to a mechanical helmet or vibrator for the relief of this troublesome symptom. I have the pleasure of presenting for the inspection of this Society the first one, so far as I can find out, that was ever imported to America. It communicates its vibrations gently to the head, and produces a sedifying and soporific effect.

(5) Medicinal Treatment: All insomnics need tonics; hence the cases can be divided into (*a*) Anemic, (*b*) Plethoric ones. In anemic cases iron in full doses, with quinine, nux vomica, zinc, or phosphorus, will be found of some value. Iron, when used in conjunction with the douche and rain bath, is doubly efficacious. (*b*) For the plethoric cases I have found strychnia, restoring as it does the vaso-motor tone; quinia as a tonic stimulant, and hydrobromic acid, relieving the cerebral congestion and acting as a sedative, a combination of great usefulness. If the urine contains phosphates and oxalates, nitro-hydrochloric acid should be given. To favor sleep I have found the bromides, in combination with full doses of ergot and digitalis, of unquestioned value. I prefer the lithium and sodium bromides, as they are the best hypnotics of the bromide salts, containing ninety-two and seventy-eight per cent, respectively, of bromine. Many drugs have been suggested, but these are the most useful. A word in regard to hypnotics: I consider them dangerous. The grave responsibility of suggesting a sufficient quantity of alcoholic or malt liquors to produce sleep and the dangers of forming a habit from such a prescription are not to be forgotten when the patient is lightly told to "take a toddy at bedtime." Morphia I never use for the relief of insomnia.

Chloral I rarely use. The dull, heavy feeling, the headache, gastric disturbance, and anemia are just additional burdens instead of relief. Hyoscyamus drys the mouth, dilates the pupil, and causes intense *malaise*. Paraldehyde has a nauseous taste and causes transient albuminuria. I have not used it for two years. With sulphonal the dose must be increased, and the drowsiness felt on the next day may amount to pain. I have seen one case of undoubted and uncomplicated sulphonal habit. Chloralamide has in nearly every case caused oppressive and unpleasant dreams, a bad taste in the mouth, and a heavy feeling next day. I have not given hypnol a sufficient test to express an opinion. I do not wish to run down the hypnotics, but I do wish to enter an earnest protest against their present universal administration. They are two-edged swords, and it has always been a question with me whether the good they do is not offset by the harm they cause. No less distinguished physicians than Dr. Ferguson and Dr. Baker enter an earnest protest against their use. Why should a hypnotic be given when other measures less inimical to the welfare of our patient may be used and made to yield better and more permanent results? I believe that under an intelligently arranged hygiene, assisted by the methods before mentioned, with help of tonics not hypnotics, sleep can be regained, and regained in a way that will leave the body in a state of excellent health.

In conclusion, it were well for all of us to remember that "no man can gain time by stealing it from sleep."

TYPHOID FEVER; ITS IMPORTANCE.

By J. Fulton Purdom, M. D.
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That typhoid fever is a question eminently important and well worthy the serious consideration of any practitioner of medicine is a fact that will not be disputed, and yet, judging from current medical literature, the fact is clearly established that there are but few men giving special attention to the investigation of the subject.

In the opinion of the writer the disease from its importance demands more attention than it is now receiving from the profession, either in discussions before medical societies or in papers published in medical journals.

It is a lamentable fact that the practitioner of medicine manifests a decided timidity in pressing the claims of his opinions before a medical society on a subject so common as typhoid fever, notwithstanding the fact that he will see twenty or more cases where he will see one of appendicitis, ectopic pregnancy, or ovarian tumor, and notwithstanding the fact, also, that he will perhaps record three or more deaths in the same number of cases, apparently forgetting that he sustains the same relation to those cases and to the discussion of the subject before the medical societies that the surgeon does to appendicitis, ectopic pregnancy, ovarian tumors, etc.

How differently the surgeon acts with reference to his side of medical science. He comes boldly to the front and justly demands and receives our time and attention in the

presentation of his opinions relating to surgical pathology, technique, and the various operative procedures intended to alleviate human suffering and prolong life. So long as surgical pathology was left to the judgment of the book-makers the peritoneum was the bugbear to the operator; idiopathic peritonitis was not questioned; men and women died from conditions, the real nature of which the medical attendant had but a vague idea. But when men in active practice began to think for themselves and to express their opinions as individual investigators, searching for facts that were beclouded with doubt and hidden by empiricism, surgical pathology was rewritten, and has become a matter of scientific knowledge which forms the basis for improved technique and operative work so brilliant in its results that it commands the admiration of the world.

The medical practitioner should feel an equal interest in all that pertains to his department of medical science, realizing the potent fact that the underlying principle of all real success in the administration of drugs is a proper understanding of the pathology of the disease he is trying to cure, a knowledge of which necessarily comprehends the etiological factors by which the pathology is produced. The subject of typhoid fever is an important one for discussion; first, because the disease has not an established pathology; second, because its destructive influence is not limited to time or place; but the disease may occur anywhere, or at any season, dependent always upon the ingestion of the specific cause. It is important because of its high rate of mortality, and because of the fact that the majority of those who die of typhoid fever are young adults, usually vigorous, healthy people until attacked by the disease; important because of the long duration of the illness of the patient suffering with an acute disease, and the extreme anxiety of the friends of the patient, which is

increased tenfold by the fact the profession make no claim to their ability to cure the disease, frankly confessing that we can only help the patient to outlive a condition the nature of which we do not understand, not being able even to offer a reason for the self-limitation of a disease so common to almost every country, and that has destroyed so many of the physically most promising young people.

The subject is one of importance for discussion, because exchange of opinion is the greatest means possible to stimulate original investigation, without which we can never have an established pathology, and in the absence of an established pathology based upon scientific investigation we can never have a uniform system of treatment. So long as the confusion continues that now exists with reference to treatment we can not hope to lower in the aggregate the present high rate of mortality. As an evidence that confusion in treatment does exist, and that there is not an acknowledged scientific basis for a uniform system of treatment, we find one man says the internal administration of antipyretics are indicated, another says not; another says intestinal antiseptics should be given, and another says they are without value; one man says feed your patient, another says feeding aggravates the disease; one man says whisky is the most potent remedy we have, so much so that he gives in some cases a quart per day; another says his patients do best without alcoholic stimulants; one man gives antiseptics that are absorbed by the stomach with a view to influence the specific cause in the blood, another says antiseptics of that character never reach the specific cause.

I recently heard a doctor state before a medical society that there was but one treatment for typhoid fever, and that was by the cold bath. He stated that the cold bath treatment should be made compulsory by law, and yet the

same gentleman, when asked to discuss the pathology of the disease, declined to do so.

In the opinion of the writer the subject becomes especially important because of the fact that the pathology as laid down in the text-books is entirely unsatisfactory and absolutely misleading, and is responsible for the confusion that exists relative to the treatment of the disease. The only means of escape from such a state of confusion is that we no longer leave the pathology of the disease to the judgment of the book-makers (who are to a great degree only compilers of stale medical literature), but by the expression of independent thought from the active practitioner, stimulating original investigation, the truth may be arrived at, and a correct pathology established which will form a scientific basis for a uniform system of successful treatment.

That typhoid fever has a pathology, we will all agree, but in what that pathology consists we may differ widely. As intelligent practitioners of medicine we are forced to admit that all therapeutics are empirical unless they find a scientific basis for their administration in the pathology of the disease under treatment.

A knowledge of the etiology of disease when taken alone does not form a scientific basis for treatment; for unless we understand the mode of entrance and can locate the point of attack made by the specific cause, and determine the limit of tissue invaded, with due regard for the product that may be formed as a direct and necessary result of the increase of the specific cause, having an intelligent appreciation of the separate and combined action of the specific micro-organism and its toxine, and the pathological avenues which may be opened up through which other micro-organisms may become active, we are not *fully* prepared to treat the disease from a scientific standpoint.

Koch's discovery of the tubercle bacillus was practically the key to the etiology of typhoid fever and many other diseases. His discovery of tuberculin has become equally the key to pathology; for when it was demonstrated that a diffusible product was formed as a necessary result of the growth of the tubercle bacillus, men readily extended the application of the same principle to their investigations of the growth of other micro-organisms. It must now be acknowledged as a law in biology, that all disease-producing micro-organisms furnish a diffusible product as a necessary result of their growth, constituting a second factor in the process of disease which can not be disregarded in the study of pathology.

In the absence of the specific cause an individual can not have typhoid fever, though he be surrounded by the most unwholesome conditions. With the ingestion of the specific cause he may have the disease, though he be in the midst of the most favorable hygienic surroundings.

We will assume that there are but few men to-day who dispute that typhoid fever is produced only by a specific micro-organism, which we will here call the typhoid bacillus. While we will admit the possibility of the bacilli being taken on to the fauces from the atmosphere, in the act of inspiration, yet we most emphatically deny their ability to produce the disease except they be swallowed and escape the action of the stomach and find lodgment in the glands of the small intestine from the lumen of the bowel, and not from the blood. With one or more of those glands thus infected the individual has typhoid fever, though not manifest even to the patient until systemic symptoms arise. The bacilli infiltrate the glands infected, and their action in the development of the disease is entirely local, which results in a non-suppurative necrosis of the gland tissue. With the beginning of the growth of the bacilli in "Peyer's

patches" we have furnished a diffusible toxine which is readily absorbed and transmitted to every tissue of the body. To the action of this toxine is due all the systemic symptoms prior to necrosis of the glands infected. The nervous system being most sensitive to the action of poisons circulating in the blood, the typho-toxine through its action on the nervous system produces a pathological state of every function of the body which is first manifested by faulty elimination, the retention of waste products thus decreasing the ability of the system to resist the action of the typho-toxine, which is not only acting upon the nervous system, but is affecting every tissue of the body both directly and indirectly, thereby rendering the system less able to resist the action of other micro-organisms that may enter through the lymph or blood channels later in the history of the disease. When necrosis has taken place in "Peyer's patches" the system is no longer able at those points to resist the action of the pus-producing micro-organisms. Ulceration now takes place as a result of the action of the pus-producing cocci, and may extend through the walls of one or more blood-vessels made manifest by greater or less hemorrhage, or the ulceration may be extended through the walls of the bowel with a fatal peritonitis. The action of the pus-producing micrococci is in no sense a part of the specific element of the disease, but is a complication in the fullest sense of the term; for they can act only through and as a result of the pathological conditions produced by the specific bacilli and their toxine. An increase in the local lesions is by no means the only complication that may arise as a result of the action of those non-specific micro-organisms. They, like the specific bacilli, furnish products that are absorbed, in addition to which the micrococci may be carried through the lymph and blood currents to very remote portions of

the body, and produce pus formation in consequence of the lowered vitality of the system resulting from the previous action of the typho-toxine. Some of the specific bacilli may also be carried through the lymph channels from the infected glands, being taken up as *detritus* along with the products of necrosis and suppuration.

In support of the statement that the action of the specific bacilli in the development of the disease is confined to the infected glands of the intestine, and that their presence elsewhere in the body is purely incidental, it is only necessary to refer to the fact that the intestinal lesions are the only characteristic pathological changes that are found, which could not be the case if a dissemination of the bacilli through the body was necessary to the development of the disease. The proposition is too clear to admit of argument. That the self-limitation of typhoid fever is not dependent upon the development of an anti-typho-toxine is clearly proven by the fact that we have relapses, which would not occur if the anti-toxine had the power to arrest the primary attack, for it would require less to prevent than to cure.

The most reasonable explanation of that meaningless phrase, "the disease must run its course because it is self-limited," is to be found in the fact that the action of the specific bacilli is local and confined to the infected "Peyer's patches," consequently the disease can continue as typhoid fever *only* so long as is required for the bacilli to consume the tissue in the glands infected, relapses being dependent upon the infection by the specific bacilli of glands that were not involved in the primary attack. All cases that have a return of elevated temperature after convalescence has begun are not necessarily relapses of the disease in so far as relates to its specific character, but may be and often are due to the action of other micro-organisms as a sequel

of nature's loss of resistance. The bacteria of decomposition being always present in the intestinal canal, the gases resulting from their action on the contents of the bowel may become a factor of material importance in the history of the disease. It is to the action of this class of bacteria that we must ascribe the tympanites that occurs, though they become active only after the pathological conditions have been more or less established by the specific factors of the disease.

The word "treatment" is indeed a comprehensive term, yet we affirm that if scientific medicine indicates anything, it indicates intestinal antisepsis in the treatment of typhoid fever; but that does not signify that we ignore the fact that each case possesses an individuality, for upon a proper management of the case in detail will depend largely the success of the remedies intended to act upon the specific cause.

A CLINICAL NOTE ON CHLOROFORM ANESTHESIA.

By James W. Guest, M. D.
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I have made it a rule to keep an accurate record of cases in which I have administered anesthetics. The record of each case is made the evening of the day of operation, so that particular points may be noted while the case is fresh and distinct in mind. The following cases illustrate the accidents which have occurred in administering chloroform and the manner in which the same were treated, the cases being selected from a series of four hundred and forty-eight in which chloroform exclusively was given, and eighty cases in which chloroform was used preparatory to ether anesthesia in long operations. The cases reported were in the hands of various surgeons, and the operations to which the patients were submitted varied.

There are two theories relative to the mode of onset and method of action in chloroform poisoning; one is that the drug acts by suspending respiration, the other that it paralyzes the heart. The observations here recorded are directed to this particular point:

Case 1.—Female; age, forty; size, medium; condition, normal; operation, minor; cone, open towel; amount given, one ounce (Squibb). Result: Patient took it badly; pulse suddenly stopped in six minutes, respiration quickly following.

Sylvester's artificial respiration and inversion of patient employed; revived in seven minutes; operation finished under ether.

CASE 2.—Female; age, eighteen; size, large; condition, normal; operation, minor; cone, wire frame (Esmarch); amount given, four drams (Squibb). Result: Patient took it perfectly for twenty minutes, when without warning the pulse suddenly stopped, respiration very quickly following. Sylvester's artificial respiration and sixty minims of brandy hypodermically revived her in four minutes. Operation completed.

CASE 3.—Male; age, twenty-eight; size, large; condition, normal; operation, minor; cone, Esmarch; amount given, one ounce (purified). Result: Patient struggled fiercely for five minutes, but took it well for the next ten minutes, when quickly his heart's action ceased, respiration continuing. Sylvester's artificial respiration and ninety minims of brandy hypodermically revived him in three minutes. Operation finished under chloroform.

CASE 4.—Male; age, fifty-two; size, medium; condition, mitral murmur and chronic bronchitis; operation, major; cone, Esmarch; amount given, four drams (Squibb). Result: Patient took it perfectly for twenty-five minutes, when without the least warning his pulse stopped. Respiration good up to cessation of pulse. Sylvester's artificial respiration revived him in two minutes. Operation continued under chloroform.

CASE 5.—Male; age, thirteen; size, small; condition, normal; operation, minor; cone, Esmarch; amount given, one dram (purified). Result: Patient took it badly. Both heart and respiration embarrassed, and both suddenly stopped in eight minutes after commencing, but unquestionably the pulse first. Sylvester's artificial respiration revived him in one minute. Operation continued under chloroform.

CASE 6.—Female; age, thirty-five; size, medium; condition, anemic murmur, asthmatic; operation, minor; cone, Esmarch; amount given, two drams (Squibb). Result: Patient took it well for ten minutes, when without warning the pulse suddenly stopped; respiration good up to that time. Sylvester's artificial respiration, one sixtieth grain of strychnia, and

ninety minims of whisky revived her in six minutes. Operation completed.

CASE 7.—Female; age, twenty-eight; size, large; condition, normal; operation, minor; cone, Esmarch; amount given, one dram (Squibb). Result: Patient took it quietly and perfectly, without any embarrassment of either circulation or respiration. Conjunctival reflex abolished in five minutes. Patient evinced slight sign of sensation during the operation. Operation completed in six minutes. Cone thrown aside and operator cleansing parts, when the circulation commenced to fail rapidly. In ten seconds it had entirely ceased, though respiration continued fairly good for several seconds. Sylvester's artificial respiration continuously employed. Three drams of whisky, one sixtieth grain strychnia, one one-hundredth grain nitro-glycerine given hypodermically. Feather titillation of fauces, inversion of patient, and insufflation of lungs employed, but of no avail. Twice the patient made a few gasping respirations, and gave hopes of a resuscitation, but I could never detect a pulse-rate or a heart-beat. Given up as dead after forty-five minutes' continuous efforts to revive her.

CASE 8.—Female; age, fifty-one; size, large; condition, functional irregularity of the heart; operation, major; cone, Esmarch; amount given, three drams (Squibb). Result: Patient breathed badly and irregularly in the lateral position, but her pulse was strong and more steady. Operation completed, dressings applied, and patient put to bed in twenty-nine minutes, with pulse ninety-six and respiration good, taken just before removal from operating-table. Three minutes later no radial pulse and embarrassed respiration. Two drams of whisky and one sixtieth grain nitro-glycerine given hypodermically. Nitrite of amyl and spirits of ammonia inhaled for eight minutes. Returning pulse-rate and respiration decidedly better. In five minutes longer, with inhalations, both circulation and respiration good. I will add she had lost considerable blood during the operation, but it was never detected in the pulse-rate (which is usual), and the characteristic failure of her heart denoted chloroform poisoning.

CASE 9.—Male; age, twenty-seven; size, medium; condi-

tion, normal; patient anemic; operation, major; cone, Esmarch; amount given, four drams (purified). Result: Took it well for thirty-three minutes. Operation completed and patient put to bed in good condition. Pulse ninety and good volume, and respiration good ten minutes after operation. Patient left with nurse. Twenty minutes later Dr. Ap Morgan Vance, the operator, was hurriedly called to see him, and found him pulseless, in shock, and in difficult respiration. He worked with him nearly one hour before he could leave him with safety.

SUPERIORITY OF COCAINE OVER OTHER MYDRIATICS IN IRITIS.

By P. Richard Taylor, M. D.
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Iritis is produced by traumatism of the globe, although it is commonly due to malaria, gout, syphilis, rheumatism, and other systemic diseases. When the cause is removed the treatment is simple. It is in those cases where it is difficult to remove that cocaine has its greatest advantage over the mydriatics ordinarily used.

We have learned to rely on atropine in all the forms of this disease, whether simple or complicated with cyclitis or conjunctivitis. The greatest care must be exercised in its use, or it will cause the most serious disorders, among which are conjunctivitis, increased tension, and atropine poisoning. The other favorite mydriatics, daturine, hyoscyamine, duboisine, atrosin, and homatropine are subject to similar objections, and they also cause systemic poisoning.

I offer cocaine to you as a substitute because it can be used an indefinite time without deleterious local or systemic effects. A few drops of a ten-per-cent solution of this mydriatic instilled into the conjunctival sac is rapidly absorbed, carried to the inflamed iris, paralyzes the ends of the motor oculi, stimulates the sympathetic nerves, and produces dilation of the pupil, at the same time paralyzing the terminal ends of the sensory nerves, and relieves pain and photophobia.

It also contracts the blood-vessels to such an extent as to render them almost bloodless, which will control the inflammation by arresting the escape of inflammatory material through the coats of the vessels.

In iritis, in order to get the best effects from cocaine, it should be used in concentrated form and frequently applied, for it has a tendency to limit its own absorption by contracting the blood-vessels of the conjunctiva and rendering them almost bloodless. The more intense the inflammation the more concentrated should be the application. I use a twenty-five-per-cent aqueous solution or a salve of petrolatum one hundred parts and cocaine twenty-five parts. The latter I prefer because it remains much longer in the conjunctival sac than the aqueous solution.

CASE 1. January 13th: John M., aged thirty-five, put himself under my treatment. I found him suffering from rheumatic iritis in both eyes. In left eye the aqueous cloudy, iris a muddy color, pupil contracted, and conjunctiva inflamed. In the right eye symptoms were not so severe, no clouding of the aqueous, iris a dingy color, pupil contracted, episcleral vessels around the sclero-corneal juncture congested, conjunctiva not inflamed. As an experiment I prescribed for the left eye three drams of petrolatum and forty grains of cocaine, to be applied every two hours. For the right eye I prescribed two grains of atropine and one half ounce of distilled water, to be dropped into the eye every three hours.

January 18th: Left eye was much improved, aqueous was clear, conjunctivitis not so severe. Right eye was worse, aqueous was cloudy, conjunctiva inflamed.

I ordered the salve stopped and the atropine to be instilled into each eye. January 24th the left eye had become worse, and the right eye was not improved. I then ordered the atropine solution stopped and the cocaine salve

to be used in both eyes. January 30th both eyes were much improved; salve was continued until patient was dismissed, February 17th, with neither synechia nor deleterious effects from the cocaine.

CASE 2. March 3d: Laura F., aged twenty-four, came to me with her left eye bandaged. Examination showed she had iridocyclitis, with increased tension. I prescribed the salve, three drams of petrolatum, two scruples of cocaine to be put into the eye every two hours. March 7th, tension of the globe normal, and the other symptoms improved. March 12th there was marked improvement, which continued uninterruptedly till case was dismissed, April 1st, the cocaine salve being the only local treatment.

CASE 3. March 31st: Carrie C., aged eleven, was brought to me with iritis in both eyes, not far advanced. I prescribed three drams of cocaine and one half ounce of distilled water to be instilled every two hours. April 7th, eyes much better, and continued to improve rapidly until she was dismissed well, April 13th.

DISCUSSION.

DR. PALMER: When coca was first introduced it was said that the natives of Peru were, by the mastication of the leaves of this wonderful plant, enabled to endure any amount of toil and deprivation, and that too without resulting depression. It was claimed of coca that it stood alone among all the stimulants as an agent not followed in its use by depression. I have had occasion, owing to the locality of my office, to use cocaine not a little in the eye, and have noted its mydriatic effect, as well as its local narcosis; but what I wished to speak of more particularly was the marked depression that follows the use of cocaine, either in those mucous surfaces that I am in the habit of treating, or as an internal agent, or even as used by limited instillation into the conjunctiva. I think that the myth of a stimulant that shall not be followed by depres-

sion is a will-o'-the-wisp that will not be overtaken. While my experience in regard to the application of cocaine to the eye in the case of minor accidents is very small, yet I want to be put on record as saying that in a very large and daily use of cocaine in the upper air-passages in syphilitic lesion, and in the production of local anesthesia that is necessary in certain operative work that I do, I find frequently very pronounced depression following the application of the drug. I notice in Dr. Kraft-Ebing's recent work on sexual perversions that he reports several cases in which the sexual appetite is destroyed or very materially inhibited by the use of cocaine. I have had demonstration of this action of the drug, which I am convinced is not a specific or peculiar inhibition, but simply an evidence of its general depressing effects. While I do not think there is much danger of sudden death from cocaine (I have used it many hundred times without any thing more than practically unimportant, at least not dangerous, after-effects), I hold that it is not in any sense a stimulant that escapes the danger of subsequent depression; on the contrary it, far more than alcohol, ether, chloroform, or even the opiates, is liable to be followed by a profound but limited depression.

I have had under observation a number of cases of loss of sexual power by use of cocaine in the urethra, but in all cases these losses have been temporary and were simply, as I have said, specific phases of the general sedation that follows the stimulus of cocaine. I can not understand how there should have arisen and been generally accepted that wide-spread idea that there had been discovered here a plant more marvelous than the fabled lotus, and that it would stimulate and sustain through hours and days without any subsequent depression. I think, on the contrary, it illustrates the fact that there is no stimulant which can be used by physician or surgeon that will not be followed by an equal and perhaps a greater degree of depression.

DR. R. B. GILBERT: Have you observed that any patients have acquired the cocaine habit?

DR. PALMER: I think, with some of the recent writers on the subject, that the cocaine habit is one of the most difficult

to develop. I have had but two instances, in a very large and free use of cocaine, in which the cocaine habit has been developed. Both patients used cocaine by sniffing it into the nose, and in both instances, when the cause of their depression and physical and almost mental obliquity was explained, they discontinued the use of the agent without any trouble whatever. I do not believe that cocaine will ever rank with opium or alcohol as a remedy to be feared from the danger of producing the enslaving habit. I think its power for harm here has been very much exaggerated. I have used it not a little myself from time to time after having had a nasal trouble, and found in its effects nothing of an agreeable nature. There is no euphasia produced, nothing more than a temporary cessation of pain, that would encourage one to cultivate it as one would cultivate the use of morphine or alcohol.

DR. TAYLOR: I believe we are discussing cocaine in general use rather than in iritis. I do not believe any drug has been discovered which will stimulate without producing a corresponding depression. Mark you, the use to which I put the cocaine was for its depressing and not for its stimulating effects. I wanted the local depressing effects in order that we should not only dilate the pupil, but might lessen inflammatory action by means of the depressing influence of the drug. In using it in the eye we lessen absorption of cocaine into the deeper structures by the contraction of the blood-vessels which it induces in the conjunctiva, and by the constant application of cocaine and the constant contraction of these vessels without allowing the stimulus to come back we can lessen the inflammatory process until we can remove the cause. We get our patient over this depressing effect gradually, gradually allowing him to come out from under the influence.

Dr. Palmer has told you that he got a decided depression from the ordinary dose in his genito-urinary practice. We know that the injection of cocaine in very small amounts into the urethra, or into the prepuce, scrotum, or testicle will cause an anesthetic condition and a general depression of the blood supply, and that when injected into the skin near the base of the penis will cause marked contraction of the vessels, not

only in the penis, scrotum, and testicles, but will lower the temperature of these parts in a decided manner. The testicles will become completely insensible, and the same impression will be made on the patient's system that ablation of the testicle will make. The powerful depression, even to nausea, which occurs in these cases, and the general slimy or oozy sensation felt are reflex. The speaker also told you that in the other two cases, where the cocaine habit was established, he used the drug in the air-passages, and as a powder or as a snuff. The rhinologist and laryngologist, as a rule, do not use cocaine so recklessly or lavishly. If you want to anesthetize a certain structure in the nose, do not snuff up the cocaine. This causes too wide a distribution for immediate local effect, and the drug will be absorbed into the general circulation and produce the systemic effect. If the cocaine be used in concentrated solution and applied directly on the structure, the local anesthetization will be obtained without the general anesthetization which must result from the absorption of a full dose into the general system, and the depressing effect will be avoided. We have three turbinated bodies in the nares, and we can make application to any of the three if we wish to remove it without affecting the sensation of the others; that is, we can simply limit the effect of the cocaine, and, as I said, by limiting its application we limit its absorption.

MYDRIATICS: THEIR USE AND ABUSE IN OPHTHALMIC PRACTICE.

By S. G. Dabney, M. D.
Louisville, Ky.

Among the "Clinical Hints" at the close of the little compend on Diseases of the Eye by Fox & Gould is the following: "Atropia is of immense service to us, but it can cure neither color-blindness nor distichiasis, nor several other ailments. 'A house is a gude thing, but nicht to ride o' the riggin' o't.'"

The following indications and contra-indications to the use of a mydriatic are derived from my own experience, and though no doubt subject to criticism in some instances, will as a rule be found safe guides to follow:

Contra-indications to the Use of a Mydriatic. (1) Mydriatics should not usually be employed in conjunctivitis of any form unless there are complications. (2) Mydriatics should not be employed in a routine way in corneal disease. They are often injurious, especially when there is ulceration near the corneal margin and in elderly persons. (3) Mydriatics are absolutely contra-indicated when the tension of the eye is increased. We are usually warned of this condition by a dilated pupil. (4) When meningeal or cerebral disease is suspected it is well to avoid the use of any agent likely to dilate or contract the pupil until the pupillary conditions dependent on the disease have been ascertained. (5) In uveal inflammation of a chronic character attended by vitreous opacities, but without pain, cil-

iary injection or other acute symptoms, mydriasis is often injurious and increases the opacities. (Fuchs explains this on the ground that a mydriatic by contracting the vessels of the iris forces more blood into the posterior part of the uveal tract.) (6) In perforation of the cornea near its margin without prolapse of iris, or where the iris may safely be replaced, mydriatics should be avoided. (7) Strong solutions of mydriatics should be used with caution in all persons past middle age, and in those who have a family history of glaucoma.

Therapeutic Indications for the Use of a Mydriatic. (1) In acute iritis mydriasis is the one thing needful. The best mydriatic is sulphate of atropia, and the strength of the solution should not usually be less than four grains to the ounce. The mistake often made is using too weak a solution. A good plan is to instill two drops in the eye at intervals of fifteen minutes during a morning, noon, and evening hour, say from eight to nine, one to two, and six to seven o'clock, and, if needed, similarly during the night. If the pupil still fails to dilate, and the pain is great, two or three leeches should be applied to the temple; if leeches are not to be had, profuse diaphoresis by a Turkish bath or pilocarpine internally will often assist the action of the atropia. (2) In acute inflammations of the cornea with intense photophobia and tendency to iritis a mydriatic is generally indicated; but in suppurating ulcers which threaten to perforate, a myotic should be used, even at the risk of iritis. Noyes and De Schweinitz recommend the alternate use of a mydriatic and myotic. (3) In injuries of the eyeball a mydriatic is generally indicated, the exception being marginal perforations under the circumstances above mentioned. (4) In scleritis and episcleritis, when acute and painful, a mydriatic should be used, but when the tension is increased and there is a tendency to staphy-

loma without iritis a myotic is preferable. (5) In acute inflammation either of the ciliary body or choroid, or both, a mydriatic should be used to put at rest the ciliary muscle and prevent its traction on the posterior part of the uveal tunic. (6) In acute retino-choroiditis, or retinal hemorrhage complicating a high degree of myopia, the eye should be kept at rest by a mydriatic until acute symptoms subside. (7) In persistent spasm of the ciliary muscle, after adjusting proper glasses, it is sometimes necessary to use a weak mydriatic until the eye becomes accustomed to its proper correction. (8) Whenever a strong solution of a mydriatic is dropped in the eye, pressure should be made on the tear sac for a minute or two to prevent the medicine passing through it to the nose and throat. If this is done, there is very little danger of producing constitutional symptoms.

Mydriasis Indicated to Test Refraction and for Ophthalmoscopy. (1) In persons past thirty-five years of age errors of refraction may usually be accurately corrected without suspending the accommodation. Occasionally, though rarely, even in persons past forty-five, slight but important degrees of astigmatism can not be detected without the aid of a mydriatic. (2) Even in young persons where several examinations by different methods give the same result it is often safe to correct refraction without suspending accommodation. (3) In any person under middle age, where there is no reason evident for impaired sight, and yet perfect vision can not be obtained, it is well to put the ciliary muscle at rest before completing the examination.

Selection of a Mydriatic. (1) For therapeutic purposes the sulphate of atropia in solution varying from one half grain to eight grains to the ounce, according to the severity of the inflammation, is generally to be preferred. (2) When there is an idiosyncrasy toward belladonna, or

when its continued use has produced conjunctivitis and perhaps eczema of the skin of the lid, the sulphate of duboisine in solution varying from one fourth of a grain to one grain to the ounce may be substituted. (3) The objection to duboisine is that it sometimes produces most annoying hallucinations and lack of self-confidence, symptoms which may last for four or five days. (4) To test refraction when a mydriatic is required: (*a*) in children the sulphate of atropia in solution varying from two to four grains to the ounce (two drops instilled in each eye three times a day for a day or two before the examination) is the most reliable agent; (*b*) in adults the hydrobromate of hematropia (one grain to one dram) should be instilled every fifteen minutes for an hour and a half preceding the examination. This often suffices for children too. Jackson and De Schweinitz emphasize the importance of instilling two drops of the hematropia solution into each eye on the night preceding the day of examination, and then proceeding next day as just described. (5) The advantage of the hematropia is, that its effects usually disappear in from one to two days, while the sulphate of atropia, used as described, suspends the accommodation for a week or longer. (6) For ophthalmoscopic purposes, in the exceptional instances where dilatation of the pupil is necessary, two or three drops of a four-per-cent solution of cocaine, instilled once or perhaps twice, about half an hour before the examination, produces sufficient mydriasis. This drug has the advantage of very transitory effect. The mydriasis it produces usually disappears in an hour or two.

A CASE OF SUPPURATIVE PERITONITIS; LAPAROTOMY; RECOVERY.

By W. A. Quinn, M. D.
Henderson, Ky.

Mrs. W., aged twenty-eight, multipara, was first seen by me October 15, 1892. The patient gave the following history of her present trouble: In August of the same year she had had an abortion. She was at the time living in the country and was attended by a neighboring physician, who left her believing that he had emptied the uterus, but taking the precaution to give some direction about the management of the case and asked to be notified if the patient did not get on well. She did not improve, but thinking that she had gotten no worse, and expecting each day that she would be better the next, she did not report to her physician.

After about five or six weeks she was brought by her husband to the city. At this time she was very much emaciated, and stated that she had suffered from nausea, occasionally vomiting, for several weeks. Upon examining her I found the pulse 120 and feeble, the temperature 102°, tenderness over abdomen, and a considerable quantity of fluid in the peritoneal cavity. Treatment was of no avail, and at the end of two weeks she was in very much the same condition, except the ascites was beginning to make her very uncomfortable, so I determined to tap her. Dr. Arch Dixon was sent for, and with his advice and assistance I drew off about three quarts of purulent fluid. She was

more comfortable for a few days, the annoying symptoms in a measure subsiding, only to shortly reappear with increasing severity. The abdomen quickly refilled, the thermal line ranged a little higher, and the pulse continued fast and feeble.

Assisted again by Dr. Arch Dixon, I drew off about three quarts of purulent fluid. We then filled the peritoneal cavity with sterilized water, and by this ineffectual and unsatisfactory method washed her out as best we could, hoping that this operation would yield better results than the former one had done, but in this cherished hope we were disappointed.

The patient gradually grew weaker, the abdomen began to rapidly refill, and rigor, fever, and the weak heart made it clearly evident that route practice would result disastrously to her, as it had done before in many hundreds of similar cases. She was accordingly advised that abdominal section was the only means which promised to avert impending death. In the meantime I had made a urinalysis, with negative results, and Dr. Dixon and I had again carefully examined the patient and were able to exclude disease of the heart and lungs, whereupon we promised her certain relief by the operation, thereby gaining her consent.

The afternoon of December 1st was the time appointed to operate; Dr. Dixon assisting. I shall not here parade the technique of the operation further than to say that the field of operation was prepared in the usual way. An incision about three and a half inches long was made in the median line down to the peritoneum, beginning about one inch and a half below the umbilicus and extending in the direction of the pubes. The peritoneum was then cut through, and about four quarts of pus was evacuated. On turning up the edges of the peritoneum its surface was

found to be granular and studded with tubercles about the size of mustard seed, partially covered with pus. The whole cavity was thoroughly washed out with plain boiled water at a temperature of about 110° F. About four gallons were run through with a fountain syringe, the doctor carefully wiping the adhered pus from the peritoneum with his hand during the douching. When the water ran clear the douching was stopped, a glass drainage-tube was inserted, and the wound closed in the usual manner with interrupted deep and superficial silk sutures. Iodoform, iodoform gauze, absorbent dressing, with adhesive strips, and bandages were applied, the patient put to bed and made comfortable by a hypodermic and the use of hot-water bags and bottles.

The operation lasted about forty minutes, and the patient rallied fairly well from it. A little water was given at intervals, without occasioning retching. On the morning after the operation the drainage-tube was emptied in the usual way by means of a syringe and a piece of rubber tubing attached, but serum containing very little pus was all that was found. Temperature 99.5°, pulse 110. On the second morning the temperature had risen to 102°, pulse 110, and pus had been discharging from the tube. The drainage-tube was again emptied as on the preceding morning, and about four ounces of pus withdrawn. The cavity was washed out with sterilized warm water. Every morning until the fifth the tube was found to contain pus, and about four to six ounces was withdrawn from it each morning, the pulse and temperature remaining about the same.

On the fifth morning we washed out the cavity, our solution being one fourth Marchand's peroxide hydrogen and three fourths sterilized warm water. This seemed to clean the cavity most effectually, and gave the patient no

discomfort whatever. Serum only in small and decreasing quantity was found in the drainage-tube.

On the eighth day the sutures were removed, the glass tube was replaced by a much smaller rubber tube, and on the twelfth day this tube was removed. After the eighth day the thermal range was never above normal, and after the twelfth day the pulse never exceeded ninety, and the patient made a good recovery.

I was called last week to see her husband, and was told by her that she was stouter now than she had been since her marriage. She formerly weighed one hundred and five to one hundred and ten pounds; her weight now is one hundred and thirty pounds.

The indication to operate in suppurative peritonitis is as clear and definite as the indication for any other abscess, and should be treated in the same manner.

Lawson Tait, in a report of his second series of one thousand cases of abdominal section, published in the Medical Record, November 10, 1888, says: "Of suppurative peritonitis treated by abdominal section, washing out and draining, I have to speak in terms of unqualified satisfaction. I have operated in this series on twenty-six cases and have saved twenty-two. I say saved advisedly, for without the opening of the peritoneal abscess they must all have died."

Chappell reports a case of suppurative peritonitis and pleuritis in the Medical Record, June 23, 1888, in which he first aspirated both the pleuræ and peritoneum, evacuating two quarts of purulent fluid from the former and six quarts from the latter, the urgent symptoms subsiding only to return in a few days with increased urgency. He finally opened, washed, and drained both cavities, and speedy and permanent recovery followed.

We have now well nigh outlived the traditional fear of the peritoneum. The beneficial effects which follow the opening of the peritoneum, as first thought by Tait, are now universally recognized and accepted.

That some physiological condition is set up and some therapeutic change is effected by the mere opening of the cavity is no longer doubted.

No cases in the whole domain of abdominal surgery promise more from an operative standpoint than do those of suppurative or tubercular peritonitis.

SOME HEREDITARY AND CONGENITAL EYE DISEASES.

By J. Morrison Ray, M. D.
Louisville, Ky.

The trend of modern pathology is to a study of the bacterial origin of disease. This has probably been carried so far that other important aids to diagnosis have been neglected. Our forefathers in medicine laid great stress upon temperament, diathesis, and idiosyncrasy in diagnosis and prognosis. Other things beside the mere presence of an organism certainly play an important part in the development as well as in the propagation of disease. This is nowhere better illustrated than in the ravages of tuberculosis in certain families.

Mr. Jonathan Hutchinson, in his interesting lectures on the Pedigree of Disease, emphasizes the importance of the study of family histories and predisposition, and gives a number of most interesting and graphic examples showing beyond doubt the proneness of certain forms of inflammatory disease to be transmitted.

Older writers placed such great confidence in this manner of diagnosis that Mr. Hutchinson says Prof. Laycock was, by a study of the temperament and physiognomy of his patients, enabled to make diagnoses that astonished his associates. The question of hereditary and congenital diseases must therefore at all times interest the physician.

In the study of the eye we often encounter certain con-

genital defects that plainly have been transmitted from parent to offspring. Less frequently we see diseases developing in adult life that show distinctly the results of a hereditary predisposition. But little space is given in our modern text-books of ophthalmology to the study of this class of diseases, seemingly preferring to emphasize the inflammatory forms of disease wherein can be found some form of micro-organism on which to base the pathology and treatment. While probably diseases due to an inherited weakness are less frequent and less amenable to treatment, they demand attention. Under existing social conditions we may have but little effect in preventing them. Then it is well that they be recognized, and the possibility of their development understood.

Many varieties of eye diseases appear as the result of a hereditary transmission. Deformities of certain kinds are known by their appearance to be congenital.

I do not propose to enumerate all the possible anomalies that may occur as a result of a predisposition, but to call attention to a few eye disorders that have come within my personal observation wherein this tendency was well shown.

That like begets like is nowhere better demonstrated than in the study of refraction of the human eye. Hypermetropic and astigmatic parents beget hyperopic and astigmatic children; myopic parents, children with a tendency to myopia. This rule is so constant that one can often predict with certainty the condition present before an examination, the family history being known. This statement was impressed upon me by the study of a family that has been under my observation for six years.

In the spring of 1888 I operated on the eyes of Mr. Y., aged seventy-one years, for cataract. I operated upon the right eye first. Before operating an examination showed

good light perception throughout the extent of the visual field. The operation was a success from a surgical standpoint, yet when I tried to adapt lenses to compensate for the lens removed I was only able to get vision equal to 20–200, with the combination as follows: +12.D^{c}=+2.D^{c}*ax*120. The left eye was then subjected to an operation six weeks afterward with +11.D^{c}=1D^{c}*ax* 180. Vision was 20–40. Eventually this became 20–30 with spherical +11.D. The right eye never improved. On questioning I could find no evidence of the right eye being defective before the formation of the cataract. Since that time I have examined on different occasions four of Mr. Y.'s children, all daughters, and they all present one amblyopic and astigmatic eye, showing the transmission of the defect that had been present in his eye before the development of the cataract. A study of the family of these daughters is also interesting. The oldest, Mrs. P., has with the right eye only 20–100 vision when the best correction is made. This consists of +2.D^{c}=+1.75, D^{c}*ax* 135. The left has with +2.D^{c} vision equal 20–20. Mrs. P. has two children, both of whom have a defective eye. The son has this defect: R+2.75 D^{c}=20–40, L+2.75 D^{c}= 2.D^{c}+45=20–70. The daughter is amblyopic in right eye, and with the best correction, which is +2.50, D^{c}*ax* 120= the sight, is only made 20–100. Mrs. J., another of Mr. Y.'s daughters, is amblyopic and astigmatic in one eye, and she has two children, both of whom I have fitted with hyperopic and astigmatic lenses. A third daughter of Mr. Y., now single, is amblyopic and astigmatic to a decided degree. The fourth daughter I have treated for a conjunctival inflammation, and she, while having defective sight, refused to wear glasses.

Myopia probably presents the strongest evidences of inheritance of any of the forms of refractive defects. Nu-

merous examinations of the eyes of the newly-born prove conclusively that children are not born myopic.

My friend the late Dr. E. T. Ely was among the first to point this out. We have, however, abundant evidence to show that the children of myopic parents present strong inclination to eventually develop this defect.

Among my personal observations is the family of Mrs. G. She has a myopia of 8.D, with divergent squint and amblyopia in the left eye. Her husband I have never examined, yet I understand he is near-sighted. I have examined four of her children. One, aged nineteen, a young lady, is wearing 12.D, each eye fitted by a prominent ophthalmologist in another city. With these her vision is only 20–100. Second child, aged seventeen, wears 7.D each eye, adjusted by myself. Third child, aged eleven, has myopia 6.D in the right eye; myopia, divergent squint, and amblyopia in the left eye. The fourth child, aged eight, has myopia of 4.D, but does not wear glasses.

Mr. Nettleship, in an article in the Royal London Ophthalmic Hospital Reports for 1887, presents a number of cases, and traces the family histories, several of them showing how amblyopia, combined with refractive and other defects, tends to show itself to such a decided extent as the result of inheritance.

Strabismus frequently follows from parent to child. I can recall three families in which I have operated upon two or more for convergent squint, and one in which the mother and two daughters suffer from this defect.

A friend has reported to me a family of six children, five of whom have crossed eyes.

Lang and Barrett, in a large number of investigations, found that twenty-nine per cent of cases of convergent squint gave a history of heredity. One remarkable instance was where for four generations two or more in each suffered from this defect.

Among the more serious eye diseases wherein heredity often becomes a most important etiological factor is cataract, and investigation sometimes in this disease reveals a most interesting family tendency. This disposition is noted in all forms of cataract, whether infantile or senile. A few remarkable examples are found in literature. A Russian writer reports a family in which, out of forty members traced, nineteen suffered from congenital cataract.

Berry (Ophthalmic Review) reports a family which he was able to trace through seven generations. Out of fifty-nine members twenty suffered from cataract in early life.

Thompson (Transactions Royal Ophthalmological Society) investigated a family through five generations. Of twenty-eight, eleven were known to be affected.

An interesting family showing this tendency has recently been under my observation. The family Redmond I encountered while examining the pupils of the Kentucky Institution for the Education of the Blind by favor of the superintendent, Prof. B. B. Huntoon, the children found in the family all suffering probably from congenital cataract. They were aged respectively eighteen, sixteen, fourteen, eleven, and nine. The four oldest were girls, the youngest a boy. I tried to get a complete history of this family, but only succeeded in finding that the father suffered in a similar manner, and that he had a brother with one child also affected. The five I have reported are his only children. These have been subjected to operation by absorption, with considerable improvement in all, yet, like all such cases, there is a congenital deficiency in the perceptive power of the retina.

The senile form of cataract less often shows such strong hereditary tendency as those just reported.

Roosa, in the American edition of Schmidt-Rimpler, says he has operated on three in the same family for the

senile variety, and he knows of a family where there were five cases. I have extracted in one case recently whose mother had submitted to a similar operation at the hands of the late Prof. S. D. Gross when he was a resident of this State.

A study of glaucoma often shows a decided tendency to heredity. Harlen reports a case in a girl of seventeen years whose ancestry for four generations were known to suffer in a similar manner. Von Graefe was aware of this peculiarity in glaucoma. I have encountered a few instances showing this tendency. I have had under observation two sisters, both of whom were blind in one eye from acute inflammatory glaucoma, and the mother was said to have become blind when quite old, most probably from the same trouble. I have under treatment now a gentleman suffering from glaucoma in both eyes, one complicated by hemorrhages, whose father was blind for a number of years by an eye disease that gave rise to frequent attacks of neuralgia. I have also encountered one case in early life in which there was a family history of a similar defect in others of the family.

I might continue farther in the line of congenital eye diseases, and report cases showing structural changes of different varieties, also the results of eye disease due to condition of race; for instance, the proneness of the Jewish race to glaucoma and the colored race to so-called strumous eye disease, yet this would take me rather into a study of diathesis.

I have given these notes not so much for the purpose of putting on record the cases, but to emphasize the condition that often underlies many ophthalmic diseases, and to show that while investigating the etiology of disease it is often advantageous to lay aside modern bacterial investigation and search the family tendencies of the patient.

REPORT ON NASAL SURGERY, WITH ILLUSTRATED CASES.

By M. F. Coomes, A. M., M. D.
Louisville, Ky.

The status of nasal surgery compares favorably with other branches of surgical science, and its devotees will be found in the front rank of the army of surgical workers.

An inquiry into the causes of inflammations of the nasal mucous membrane, aside from those that are produced by syphilis and the exanthems, and a more careful study of the pathology of these inflammations has brought to light many things to guide us in their management that in years gone by gave both doctor and patient an incalculable amount of trouble. Many cases that were then considered catarrhal inflammations are now known to be due to malformations by which the membranes covering the septum and that covering the turbinated bones are thrown together, and thereby keeping up a constant irritation by their actual contact, and by preventing nasal respiration, or, more strictly speaking, by producing complete or partial nasal stenosis. Again, the erectile tissue that is found in the nose is often the seat of disease, and from one cause or another is kept in a state of constant erection, which in most cases results in partial or complete stenosis, possibly all of the time in some cases.

In many the stenosis is of a temporary character, coming on when in a close room, or at night while in bed, or during the time of disrobing for bed. In such cases there

may or may not be hypertrophy of the membrane. It exists in many to a limited degree. In some the membrane covering the inferior or middle turbinated bones is much thickened. The nasal secretion from most of these cases is composed almost entirely of a glairy, white mucus, which is at times streaked with blood when the nose is blown violently. As a rule there is no pus in the secretion, unless the patient should have an acute coryza. Washes, lotions, snuffs, and salves in such cases are only palliative. The remedy is to remove the hypertrophied tissue where the thickening is great, or by searing the surface from time to time with a hot wire from an electro-cautery in case the erectile is the seat of the trouble.

As a rule it is not desirable to destroy a great amount of tissue at one point of the nasal mucous membrane, because it results in a cicatrix which will always be a source of annoyance because it affords a lodging-place for inspissated secretions. Indeed, I have seen much harm result from too liberal use of the cautery in the nose.

The absence of pain during the process of the operation is no doubt the cause of this excessive burning. As the patient enters no complaint, the operator becomes unmindful of the fact that the hot wire is melting away tissue that ought not to be destroyed. Young operators are very liable to overlook this important point in the use of the cautery.

The greatest benefit in most cases is in simply searing the surface from time to time until the terminal ends of the sensitive nerves become so obtunded as to prevent them from responding to every insignificant irritant that comes in contact with the nasal mucous membrane. The quieting of these irritable nerve-endings enables the membrane to assume its normal condition, and finally enough rest results in a cure.

The following case is an interesting one, as it shows to what degree this nasal irritation may make an individual unhappy: Mrs. H., aged twenty-four, apparently in good health, complained of restlessness and an inability to procure good, sound sleep. She had an attack of diphtheria some eighteen months preceding last March, the time at which she consulted me concerning her difficulty in breathing, and also the defect in her voice, which amounted to an inability to pronounce her *m's* and *n's* plainly, always failing to sound these two letters as they should be in certain words, as in *money* and *common.*

During her sleep she tossed about the bed, the muscles of the extremities acting frequently as though they had been irritated by an electric current, the legs and arms being suddenly flexed and then relaxed. She had complained of this a year prior to this last visit, and at that time I ordered her to take strychnia, which was kept up for five months save at short intervals. The effects of the strychnia were not manifest so far as the choreic symptoms were concerned, for they were much the same at the end of the five months as in the beginning, and she ceased the use of the strychnia, as she said, "because it did not prevent the muscular twitchings."

At her visit in March she asked me particularly about the possibility of the nasal tone which she had being caused by a form of diphtheritic paralysis, which she had learned might produce such results, and also thought that the difficult nasal breathing might be due to the same cause. A critical examination revealed the fact that the membrane covering the inferior turbinated bones was much thickened and very sensitive to the touch. The surface was cocainized and the free border seared from one end to the other. This maneuver was gone through with about every eighth day until it was repeated six times. After

the third burning the muscular twitchings ceased, and up to date she has been free from them. Her voice and breathing were fully restored to their normal condition at the time of dismissal.

This case is given for what it is worth, going to show as it does that the cause of disease is often remote from the symptoms manifested.

Removal of nasal tumors is much the same as it was in years gone by, viz., by surgical means. The great difference consists in the means at our disposal for this purpose, the most valuable of which is cocaine. With it we are enabled to accomplish many things now that before the era of cocaine would have been impossible because of the great pain accompanying such operations without an anesthetic for such purposes. Another objection to general anesthesia in such operations is because of the blood, which in many instances gives rise to no small difficulty during such surgical procedures.

With the aid of cocaine the cautery wire may be used on children of tender years, and tumors removed from the same class of patients with little or no difficulty, whereas without it such operations on the nose would be impossible and impracticable without general anesthesia. There have been many improvements in the instruments used for removing tumors from the nose, and particularly in snares, hooks, and scissors is this advance most marked.

The implements that have been devised in the last ten years for dealing with bony structures are numerous and valuable. Probably the most valuable are to be found in the saws, bone pliers, and pliers for breaking the bony septum.

Correction of Nasal Deformities and Restoration of the Nose where it Has Been Depressed as the Result of Injury or Disease. The nose being an organ made up largely of

muscles, skin, and mucous membrane, which is richly endowed with blood-vessels and nerves, is a field that is well calculated for plastic work.

It is well known to every one that the nose will stand almost any amount of mutilation, and in some cases it would seem almost impossible to destroy this organ by any fair means, so persistently does it hold its own under the most adverse circumstances. With this knowledge of the anatomy and peculiarities of the structures entering into the composition of the nose, the surgeon is armed with a weapon to battle with any foe that he may encounter in this region—the face or the nose. The work of restoring a depressed nose is in most cases plastic, and requires that the surgeon should at least be an expert surveyor and a ready deviser, as it often happens that his plans, which have been made previous to the time of actual work, will have to be changed after the work has commenced, and unless the surgeon is prepared to make any change that may be needed in the work during its progress he will certainly be much embarrassed and his patient liable to suffer from want of such skill.

The following cases, with the accompanying cuts, will serve to illustrate what can be done with a nose:

CASE I. Edward Peters, white, aged twenty years, a native of DePauw, Indiana, was sent to me by Dr. George W. Baylor, of Milltown, Indiana. Mr. Peters is a well-developed man, of muscular frame, and in every way perfectly developed, save the nose, as shown in Figure 1. During the time that Mr. Peters' mother was pregnant with him she became very much frightened at a mad sow, and when Mr. Peters was born his face was disfigured by the nose being shaped in many respects like that of an ordinary "hog snout." Particularly is this manifest in the nostrils, which, as will be seen, stand wide open. There

is no other defect of body or mind. Mr. Peters is well educated, and a man above the average in intelligence. Without entering into any discussion as to whether the fright received by the mother had any thing to do with producing the malformation of the child, I will proceed to tell how I corrected the deformity.

Mr. Peters was very anxious to have the nose put into passable shape if possible, and with that view gave me full and complete charge of his case, with permission to continue to operate until both he and I should be satisfied with the results. It was an unusual operation, and one of greater magnitude than it would appear to be at first sight. I searched in vain for something in the works on surgery to enlighten me concerning the operation, and finally had to plan an original operation for the case. With every thing ready, and with Professor Henry Orendorf as the anesthetizer, ether being used, and Drs. G. W. Baylor, Samuel Holloway, and John H. Metcalfe, of Louisville, the operation was proceeded with as follows:

An incision was made from a point where the nasal bones and the cartilages unite, downward through the median line to a point on the lip where the nose or proboscis terminated. Then two lateral incisions were made extending horizontally almost to the nostrils, care being taken not to encroach upon the mucous surface. Then all of the tissues were dissected up and pushed aside so as to fully expose the underlying osseous growth. This osseous growth was about the size of an ordinary walnut after the hull has been removed. It was round, and was really a double shell, the outer portions being as hard as ivory, and the inner portions being made up of bone tissue resembling cancellated osseous structure. The outer portions were extremely hard, so much so that I broke two good saws before I was through with the operation. In order to

avoid mutilating the soft tissues, it was necessary to remove the mass of bone in sections. The first was a wedge-shaped piece taken from the center; then pieces were removed from first one side and then the other until four other pieces were removed. Then the remaining portions were broken off with pliers and chiseled off until all of the bone was removed, at least as much as desired. There was not a great amount of bleeding, but it was troublesome on account of some of the vessels coming through the cancellated portions of the bone. After the bleeding had been thoroughly stopped, a stout ligature armed with an ordinary shirt button was passed through the nose from one nostril to the other, taking care to pull the left nostril into its proper position, it being the most out of place. Apposing the parts in such a way as I thought best, another button was placed on the ligature and pushed down into the right nostril, and retained in its place by a perforated shot. Two other ligatures were placed higher up, and retained in the same manner with buttons and shot. This was the major adjustment. Then the edges of the wound were carefully adjusted and closed with an ordinary silk overstitch, and the wound covered with iodoform gauze. A small drainage-tube was placed in the most dependent part of the wound. Thorough asepsis was practiced during the operation, no antiseptic being used saved the iodoform dressing. The patient was given an opiate and put to bed; had a fair night, but suffered some on the following day from nausea as the result of the etherization. The temperature was 100.5° the first day after the operation. On the second day in the afternoon the temperature was 102.5°. There was no pain, nor was there much swelling, no pus, nor any thing to indicate that the temperature was the result of the operation. Twenty grains of quinine were given during the evening, and on the following

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

morning the temperature was 99°, and during the day went down to 98.5°, and there was no further rise.

The second operation was done on May 4th (the first having been done April 13th), under ether. This consisted in remodeling the soft tissues that were left after the first operation. As shown in Figure 1, the proboscis extended down onto the lip fully one half of its length. There was a good deal of the substructures that it was necessary to remove; that portion which extended down onto the lip was a sort of cartilaginous mass.

This second operation was done by laying the tissues open along the median vertical line down as far as the growth extended onto the lip. Then two lateral incisions (one right and one left) were made along the line where the upper end or edge of the lip ought to be. This exposed all of the sub-tissues, and after removal of such of these structures as I deemed necessary, and after shaping the flaps so as to make them unite properly, they were closed with small silk sutures, and a dressing of iodoform gauze was placed over the wound and held in position by collodion. There was no rise of temperature after this operation, and union was perfect everywhere along the line of the wound, and there was no pus formed save at the site of the sutures. The stitches were removed on the third day, and Mr. Peters returned home on the eighth day after the second operation. The time intervening between the first and second operations was twenty-one days. Figures 1 and 2 represent his condition before and after the operation.

The case represented by Figures 3 and 4 is that of Mr. Hermann Bouroughs, of Morganfield, Ky. Four years ago he was run over by a wagon and the outer plate of the frontal bone, nose, and face were badly mashed, the nose being so crushed as to force it down to a common level with the adjacent parts of the face. His injury was so severe that

his parents and physicians thought that recovery was impossible, and as a result little attention was paid to his nose. The inner canthus of the left eye was pulled down much below its normal position, and a large cicatrix existed just below the left eye at the junction of the nose and the face.

Examination showed that one of the nasal bones had been lost, either by absorption or had come away at the time of the injury. The other was flat down and in such a position that I deemed it best to let it remain where it was, as the operation was to be done only for cosmetic purposes, his breathing capacity through the nose being good. This operation was done April 4, 1893, by making an incision from a point a little above where the eyebrows unite down almost to the tip of the nose, carrying the cut down cleverly through the true skin and immediate underlying tissues, which were dissected up well down to the face—that is, well down to the line where the tissues curve up from the face onto the nose. The cicatrix under the left eye was cut in such a manner as to let it loose from its holdings, and thus enable me to elevate the canthus on that side. After a thorough dissection of all the tissues that were desirable the parts were pulled together and elevated so as to give the nose more prominence than would be desirable under ordinary circumstances. This was done to allow for contractions, which always follow such operations to a certain extent. The apposition of the parts was maintained by two small rubber splints, one placed on either side of the nose in such a position as to keep the structures in the desired position, and they were kept in their places by passing three ligatures through the splints and all of the intervening tissues. The ligatures were kept in place by shot. These splints gave a firm support, and the wound was then closed with small silk sutures, eight or nine in

number, so as to bring the integument into perfect apposition. The wound was dressed with iodoform gauze. No elevation of temperature of any consequence followed the operation. There was no pus, not even stitch suppuration. The result of the first operation was most gratifying, almost giving the results desired. Near the lower part of the wound the cicatrization was greater than I anticipated, and on the fourteenth day after the first operation a small incision was made near the lower part of the former wound, and in the same line, and the parts lifted up and kept in place by the use of two common shirt-buttons, one being placed on the ligature before it was passed through, and the other after it had been passed. A shot followed the last button, and when every thing was perfectly adjusted the shot was made to clamp the ligature and keep it in place. This last operation completed the result, as seen in Figure 4.

These two operations illustrate the kind of work that can be done about the face, and I trust will be of some benefit to the profession, who will find, as I did, that there is but little written in books or journals upon this very important branch of surgery.

TYPHOID FEVER; THE RECENT ENDEMIC IN LOUISVILLE.

By William Bailey, A. M., M. D.
Louisville, Ky.

Dr. Bailey, at the request of the State Board of Health, made some remarks on the recent endemic of typhoid fever in Louisville. He said: For the last two or three months it has been observable in Louisville that there was an undue prevalence of typhoid fever in perhaps the best district of our city. Those who are familiar with the beautiful residence part of the city south of Broadway and extending east and west will understand what part of the city is included when I say that the fever has been prevalent from Preston Street to Eighth, about six by eight blocks, making forty-eight or fifty blocks in that territory to which the endemic was limited.

As a local officer of the State Board of Health my attention was called to this, and I began investigation some weeks ago to ascertain, if possible, where the cause was. We have had no undue prevalence of typhoid fever in any other part of the city. We always have it with us more or less. I began the search, if possible, to find something that was common to these people who are the subjects of typhoid fever, and to ascertain, if possible, why the disease prevailed. By inspection at the engineer's office I got a map of the sewerage of that part of the city and found nothing in that connection that would give me any information. In other words, I found that these cases prevailed

on the streets where we have sewers, where we have none, where we have sewer connections with the houses, and where we have none. There was nothing in this relation that seemed to be affecting the people at all, so far as we were able to say, the sewerage in that part of the city being remarkably good.

Next I concluded to investigate the water supply of the city, and I found that almost universally Ohio River water was being used by that part of our people. If hydrant water is responsible for typhoid fever there, then typhoid fever ought to prevail wherever the water is used; but it is distributed equally likewise to many other parts of the city, and abundantly, and typhoid fever does not prevail to this extent; hence the hydrant water as a cause must be rejected.

Next, recognizing the probability of a milk supply as being the origin of the disease, I looked into this question, and had gone but a little way until it became very evident that the majority of the people sick were taking their supply from one dairy. This attracted my attention very soon in the investigation, and these facts then developed: That in this territory of 50 blocks there were 20,000 to 30,000 people. This dairy claims to deliver milk to over 200 families, at a large estimate 1,000 people. We have at least then 20,000 people in this same district that are taking milk from some other source. Upon the investigation I located in this territory in the last two months say 54 cases of typhoid fever. Forty-four cases of these had been drinking milk from this one dairy, then delivering milk to 1,000, which is a large estimate for a dairy of thirty cows to supply. Then we have 44 cases out of 1,000 people to whom this dairyman delivers milk, whereas we have only 10 out of the 20,000 where the milk from other dairies is used. This then was a very suspicious circumstance.

Then I took it upon myself to make an inspection of this dairy, and I must say that I found the cow-sheds, the house, the dairy, every thing apparently in the most admirable order, and recognizing that these lower animals are not the subject of typhoid fever, and could not transmit the specific cause of it in the milk as it comes from the cow, and recognizing that close relation existing between milk and water, I thought possibly that the water used for cleansing the cans was the source of the infection. I therefore had a bacteriological examination of the water supply made, and to complete the demonstration the bacillus which Dr. Vissman exhibited to-night at the Capital Hotel is from the water of the cistern on this dairy farm.

Supplementary to Dr. Bailey's remarks, Dr. William Vissman said: I do not see that I can add any thing to Dr. Bailey's report except that the bacilli found show the morphology exactly of the Eberth bacillus. This, as with numbers of other cases that might be cited where a typhoid-fever epidemic has raged in a locality, was traceable to water, and when this water was boiled or the water supply cut off the typhoid fever epidemic was cut off. I suppose that is evidence that the disease is caused by the Eberth bacilli; but we can not reproduce this disease in the lower animals with these bacilli.

DISCUSSION.

DR. PALMER: I am proud of being one of the very earliest converts to the germ doctrine, not the theory, but the doctrine that germs are a source of disease production, but I am surprised that Dr. Bailey and Dr. Vissman, in presenting this exceedingly important local instance to the State profession, have not gone more elaborately into what we might call the clinical history of the case. The milkman claimed that about seven hundred people drank his milk, and he showed me

to-day a list of twenty-five cases of typhoid fever in the same neighborhood in people who had never taken milk from him; one of the cases being my niece, living three doors from my house. I was also told by Mr. J., in whose family there are two cases of typhoid fever, the family being supplied by milk from this dairy, that the two people in the family who have typhoid fever are the two members of the family that did not drink the milk. But, to offset that, I am told of a case of a family in which all drank the milk boiled except one lady, who would not drink it boiled, and she has typhoid fever. Now the milkman tells me that while the bacillus is found in the water of his cistern it was not found in the spring from which he waters his cows, and not of course in the milk; and further, that the typhoid fever had existed among his patrons three weeks before he could have used the cistern-water in washing the cans. The fact that a very large number of people, presumably susceptible to the disease, consumed this milk and have not been infected, and the fact that a very considerable number of cases prevail in the afflicted neighborhood that do not take milk from this particular milkman, and the fact that a large number of typhoid-fever cases exist elsewhere in our city who do not take milk from any part of that section of the country where this dairy is located, are all points that should call for a very broad, very fair-minded, and exhaustive analysis of the question. I do not treat typhoid fever, but my partner has now the eighth case of typhoid fever in one house, and none of the family had milk from the dairyman in question. So that while the demonstration of the existence of this bacillus in the water wherewith this milkman washed his cans is very dramatic, it must not be taken as absolute and conclusive proof that we have found the unquestionable source of this epidemic, which, call it typhoid fever if you please, has had some very curious phases in the manner of its clinical behavior. I would ask Dr. Vissman if he does not think it would be a good plan for him to quietly collect a very considerably amount of cistern-water from the suburban cisterns and see what percentage of the bacillus of Eberth may be found in such water, rather than to confine the investigation to a single dairy?

DR. REYNOLDS: I have been very greatly astonished to hear that people had typhoid fever who never drank the milk of the implicated milkman. I do not suppose that Dr. Bailey and Dr. Vissman have hinted that a case of typhoid fever arising from the Franklin County milkman's product could not be the means of distributing it to the neighborhood. The matter is entirely new to me. The question is whether Dr. Palmer means seriously to say that the people of Louisville who have the disease and did not drink of that milk offer any sort of illustrative proof to his mind that the milk is not infected.

DR. VISSMAN: I made this investigation at the solicitation of the State Board of Health, through Dr. Bailey. I reported to the State Board that I found a bacillus that in all its morphological changes tallies exactly with the Eberth bacillus; and in my previous remarks I did say that I did not know whether the Eberth bacillus was the cause of the typhoid fever or not, because I can not prove it; but these epidemics are traceable to the water supply frequently, and if when this water supply is cut off the epidemic is cut off, that certainly is an evidence in favor of the bacillus being the cause of the fever.

DR. TAYLOR: It seems to me that it is proof positive, or at any rate clinical evidence to the effect that the milk was contaminated; but it is a question whether these new cases arising in the neighborhood may not have come from the privy vaults, and these patients who did not take the milk from the Franklin County milkman may have taken water from wells and got typhoid fever in that way; and it is more than probable that that is the way it was propagated in the neighborhood.

DR. J. N. MCCORMACK: There are two or three points that have been suggested by Dr. Bailey and Dr. Palmer that are very interesting. I do not suppose that Dr. Bailey claims by any means that this may be the only dairy selling milk in the infected area which may possibly be infected by typhoid fever. I do not think that it has ever been claimed that any one man might have a monopoly of that kind of trade. You may recollect the story of the lawyer who said to the Irishman on the

witness-stand, when he was identifying his ducks (he had sworn to them very positively), "I do not see how you could do that; I think I have ducks running in my yard just like them;" and the Irishman replied, "I have no doubt of that, they are not the only ducks I have lost." It has occurred to me possibly that there may be ducks in other milk sold in this same locality. Now it has been said there were a great many people using this particular milk who had not developed typhoid fever. We know how few people who are exposed to the large number of infectious diseases really develop the disease; a very small percentage of people exposed to cholera and who are exposed to a variety of diseases which are unquestionably infectious really develop the diseases; that would hardly be taken as an argument. Those of us who have given much attention to the pension records of this country know that a great many people came back from the war without being killed, particularly those of the Federal army; but I do not think that many of us would argue from that that bullets are not dangerous. Only a very small percentage of men that go into battle are killed or wounded, and I have no question that even with a thousand people drinking milk known to be contaminated with typhoid-fever poison only a small percentage of them would develop the disease. Many of them are immune positively to the typhoid-fever poison, and those not immune from a variety of causes might not develop the disease. In a few instances, as in the instance given by Dr. Palmer of the family where two members did not drink the milk and still got typhoid fever, they most probably have used milk in their coffee or in their tea not raised to a sufficient temperature to destroy the germs of the disease, and in that way they would have been exposed to poison, and if not immune would probably have developed the disease; but however we may view the matter, the fact that out of fifty-four cases in this immediate locality that had the disease forty-four of them were people who used this particular milk supply is a very suspicious circumstance, and warranted us at the meeting a few days since to ask the health officer of the city of Louisville to interdict that milk until free from suspicion, that is, to give the community the benefit of the doubt until further

examination had demonstrated that the milk might be safely used.

DR. PALMER: I suppose inferentially, from Dr. McCormack's remarks, that the reason why I am still alive is because I was in the Federal army. I need not say, what is only too well known, that I have nothing to do with typhoid fever practice; but I saw that the subject was going to record with the short statement of Dr. Bailey, and with the still shorter statement of Dr. Vissman, and that the whole thing was going to drop, and I thought somebody in the profession of Louisville, which is largely represented here, should stir up a little agitation. Having accomplished this to the extent of having stirred up, among others, my friend Dr. Reynolds, I feel that I have done all that I hoped to do, and I trust that I will be pardoned for coming out from the clean cut lines of surgery into the broad, evasive, and misty fields of practical medicine.

DR. BAILEY: I have never said that this milk was the cause of the typhoid fever, and I do not intend to do so—I am threatened with suit for libel. I want to say, moreover, that I do not believe all the cases of typhoid fever in Louisville have been produced by this milk. I do not know whether, as Dr. Vissman says, this germ is the essential cause or not. I have only presented you a few facts, the principal one being that in this territory of 20,000 people, 1,000 of them having milk from one source, 44 cases of typhoid fever were developed, while out of the other 19,000 taking milk from other sources, 10 cases have developed. I would simply submit it on that history, and ask you as intelligent men, would you be willing to use the milk of that dairy in your family? I asked that same question of the Society to which I presented the matter, and none replied. I don't believe Dr. Palmer would allow his children to drink the milk. This has been no personal matter with me at all, and my sympathies are largely with the implicated milkman. My sympathies are largely with this man because from the beginning of this discussion his trade was naturally lessened, until I think it was a work of supererogation to ask the health department to forbid the use of the milk. In one family, which took the precaution to boil the milk, a young lady did not like boiled milk, and drank

it without boiling. She is now in bed with typhoid fever, while the rest did not contract the disease. There is no argument to be drawn from the case of those people who, it is stated, do not drink milk, for enough milk is used with coffee, tea, berries, etc., to cause the infection if germs are present in the milk, unless the subject is immune to the disease. I present these as facts, and have done so that you may appreciate this demonstration of the Eberth bacillus by Dr. Vissman, who has kindly done this work and done it well. There will be a contest on this matter, as there is another expert who, I understand, pronounced negative results from this water; but I know the experiments of Dr. Vissman have fulfilled all the requirements of scientific accuracy; he took his sterilized media to the dairy farm and inoculated them with water directly from the cistern in less than a minute after it was drawn. The gentleman who makes the negative report does it upon water that was sent to him by the milkman. The milkman told me himself that he sent the water to the gentleman for examination. Now, have they complied, in getting their negative results, with the requirements of scientific investigation? Does the examiner know where the water came from? I am not charging now that the milkman presented any other water, but is it proof that that is the water that has been examined? And, moreover, suppose they have examined it a hundred times, and find negative results, does it invalidate the positive demonstration?

THE NASO-PHARYNX IN MEASLES AND SCARLET FEVER.

By J. A. Stucky, M. D.
Lexington, Ky.

We are all familiar with the appearance of the pharyngeal inflammation accompanying measles and fever, and any attempt at a description of it by me would be perhaps a waste of time.

It is to the naso-pharynx and post-nasal cavities in these diseases that I direct special attention.

Several years ago, in the St. Louis Medical and Surgical Journal, I claimed that in the large per cent of cases where the pharynx required medical or surgical treatment the naso-pharynx or post-nares required as much or more. I still hold the same view.

The naso-pharynx is mentioned in connection with the exanthemata of measles and scarlet fever because within the last few weeks my attention has been called to the need of closer investigation and treatment of this important part of the superior respiratory tract in acute troubles. The results of my observations in seven cases of measles (five were in adults) and three of scarlet fever (in my own family) has been somewhat of a revelation to me, and leads me to claim for and to urge equal if not more attention to the naso-pharynx than to the lower pharynx.

The sequelæ of the two diseases mentioned that I usually meet with are, (1) suppurative otitis media, (2) catarrh of the eustachian tube and tympanic cavity,

(3) pharyngo-nasal catarrh, simulating usually the hypertrophic variety.

Until several months ago I do not recall having ever examined closely, with the rhinoscopic mirror, any case of measles or scarlatina. In the ten cases referred to the result of the naso-pharyngeal examinations (rhinoscopic) showed the severity of the naso-pharyngeal inflammation to be in direct ratio with the pharyngeal, which is usually in direct ratio with the severity of the general affection. In other words, a severe pharyngo-tonsillar inflammation means a similar condition of affairs in the pharyngeal vault and extending into the post-nasal spaces, gradually subsiding in severity toward the anterior nares.

In consulting some of the leading authorities I find little or no mention of care or treatment of the naso-pharynx in these diseases.

I believe it may be stated as a fact that pharyngeal inflammation more frequently extends upward than downward, because, (1) "the soil is more inviting," (2) more glandular structures, (3) the spongy tissues, and more vascularity. Bosworth, in writing upon this subject, says: "Pharyngitis rarely shows any tendency to extend into the trachea and bronchial tubes unless the respiratory function of the nose is impaired. When, however, the mucous membrane of the upper pharynx (naso-pharynx) is involved in acute inflammation, we can easily understand how symptoms referable to the ear should in most cases be a prominent symptom, owing to the extension of the inflammation to the orifice of the eustachian tube, resulting in a temporary stenosis with impairment of the hearing, etc. The rhinoscopic mirror shows the vault of the pharynx presenting the same turgid condition as the pharynx."

Politzer, writing on the same subject, says: "In acute naso-pharyngitis frequently the mucous membrane covering the posterior extremity of lower turbinated (spongy) bones swells so considerably that it protrudes above the posterior nares, partially fills the pharyngeal vault and covers the orifice of the eustachian tubes so that ventilation of the tympanic cavity is obstructed."

This condition was observed in two of the cases of measles I had.

Cohen, writing on sore throat of measles, says: "We have catarrhal inflammation affecting the air-passages from the nostrils to the bronchi. Its severity is often in direct ratio with the severity of the general affection. The eustachian tubes sometimes become involved in the catarrhal inflammation, and there may then ensue impaired hearing or marked deafness accompanied by acute pains in the ear." Further, he says: "Sore throat of scarlet fever is often of a severe character and apt to leave permanent injury, especially of the eustachian tubes and middle ear." And then he declares there is "no difference from ordinary sore throat, save more frequency of swelling of lymphatic glands, except in the aginose variety, where symptoms are more violent and we have copious deposits of pseudo-membrane on tonsil, palate, and palatine folds."

Mackenzie says: "Pharyngitis of measles is usually of slight importance, but is sometimes accompanied by severe rhinitis, and in these cases epistaxis frequently occurs, followed by dry catarrh and ozena, occasionally ulceration of the septum nasi." He also says the "recognition of scarlatinal pharyngitis is pricipally based on the existence of the skin eruption during some period of the illness. The suddenness of the attack, intensity of the accompanying fever,

the deep red or violet tinge of the pharynx, and the occurrence at the same time of an epidemic of scarlet fever, all tend to assist in the diagnosis; but when the pathognomonic exanthem is absent some uncertainty must often remain as to the true nature of the malady. In such cases the subsequent development of dropsy and albuminuria occasionally set any doubts at rest."

As to any uncertainty of the diagnosis of scarlatinal angina without the eruption, I am now fully convinced. Nine weeks ago my little boy, aged eight years, was taken with a chill, complained of his throat, which was quite red, soon developing into a "follicular pharyngitis," which in twelve hours I diagnosed as scarlatinal angina; there was glandular enlargement, and all the symptoms of scarlet fever present except the eruption. Dr. Barrow saw him with me in the evening of the second day of the attack, and differed with me as to diagnosis, believing it simply a violent case of pharyngitis. In four or five days the little fellow was all right, no sign of eruption having made its appearance, though so certain was I of my diagnosis I closely watched for it.

In one week my little girl was taken in the same way, and in thirty-six hours the typical eruption of scarlatina, covering her entire body, made its appearance. Drs. Barrow and Bullock, who saw her for me, then concluded that undoubtedly the little boy must have had the disease without the eruption; but in eight days from the time the little girl was taken, and two weeks from date of the little boy's previous attack, he was taken in the same way, chill, sore throat, and vomiting, and on second day the eruption made its appearance. The disease ran its course without any complication. This case is reported to illustrate the truth of the adage, "we can't most always tell," especially when the pathognomonic symptom is absent.

Dr. Mackenzie concludes his article on these diseases with the statement: "Local treatment is of but little use in the treatment of scarlatina angina or angina of measles." The same might be said of any treatment of these diseases. The physician simply endeavors to guide the disease, both constitutional and local, to a safe termination, only interfering when complications arise. I have given at some length the views of a few of the leading authorities on inflammation of the pharynx and naso-pharynx, in order to emphasize the importance of the topic under consideration.

One of the most important sequelæ of these diseases is ear trouble and nasal catarrh, yet not one mention is made of any special treatment toward preventing extension of the inflammation to the eustachian tube, and through it to the tympanic cavity. In five of the cases of measles I saw I was called on account of earache, in the other two on account of laryngeal complication. In each case, especially of the five referred to, the pharyngeal inflammation was of a severe type, complicated with plugging up of numerous follicles with a cheesy substance; nasal respiration was greatly impaired or completely obstructed by turgid, swollen membrane.

After cleansing the pharynx and painting with a weak solution of cocaine, the rhinoscopic examination was made without difficulty, and the same degree of inflammation found in the pharynx was also found in the naso-pharynx.

In three cases the orifices of the eustachian tube were plugged with mucus. In two of the cases a four-per-cent solution of cocaine had to be used in the nasal cavities in order to reduce the turgescence sufficiently to allow nasal respiration. In one case the inflammation had so involved the tympanic cavity as to result in suppuration, which necessitated puncturing of the tympanum.

The only indication for treatment in any of the cases, and all were much alike in appearance, was (1) to keep the parts clean, (2) to allay irritation. This was accomplished by means of five or ten per cent of peroxide hydrogen in mild alkaline solution containing one or two grains of cocaine to the ounce, sprayed first into the pharynx, then into nasal cavities (nostrils) every two or three hours until the nose was thoroughly cleansed and nasal respiration was restored. The spray was used (with patient's head thrown back) until it ran freely into the mouth, thus cleansing the nasal cavities, orifices of the eustachian tubes, and softening and freeing much of the secretion in the naso-pharynx. In every case the patient expressed sensation of relief to the ears when both nasal and pharyngeal cavities were thoroughly cleansed.

The same treatment was used with my children with scarlet fever, one of whom suffered with his ear, and was threatened with tympanic abscess, but I believe it was prevented by attention to the nasal as well as the pharyngeal cavity.

This treatment can be used without difficulty on the youngest patient, only a little time and patience being required to convince the child that it will not hurt. The solution used must be non-irritating and soothing.

DISCUSSION.

DR. J. G. CARPENTER, of Stanford: I am convinced from former experience that the naso-pharynx and the exanthemata have been most seriously neglected by the general practitioner, and that if due attention was given to a proper local treatment many complications following in the upper air-passages could be avoided. This subject has been discussed more than once in the American Rhinological Society, and we have

tried to make it a point to impress upon the general practitioner the necessity of giving proper local treatment. I have had several cases in which there were characteristic local symptoms of scarlatina without eruption, with albuminous urine, that in from three to six weeks afterward presented the desquamation peculiar to scarlet fever. I know of no other subject that demands the careful consideration of the general practitioner more than the local treatment of the naso-pharynx in the exanthemata.

CHRONIC INFLAMMATION OF THE TONSILS.

By L. S. Givens, M. D.
Cynthiana, Ky.

Physical evidences of chronically enlarged and inflamed tonsils are so easy of detection that I deem it hardly necessary to describe at length the subjective signs. Both chronic inflammation and hypertrophy of the tonsils are generally met with in children and in the earlier years of adult life, there being a gradual tendency of these organs to disappear after the thirtieth year. There are several exceptions, however, to this general rule, and cases have been seen where the hypertrophy had disappeared, and enough of the gland or glands had been left to occasionally become inflamed, and in one case, that of a middle-aged maiden lady, the tonsils were inflamed to such a degree—with several points of cryptic obstruction, and severe pain experienced in swallowing—that a very alarming diagnosis of cancer had been given by the consulting physician, which was not confirmed, however, by a later diagnosis and a future history of the case.

Chronic inflammation may result as the remains of an acute inflammation, or it may be due to a chronic disease of the lacunæ of the gland, leading to obstruction of the crypts, with hypertrophy of the parenchyma. Chronic lacuna tonsillitis does not necessarily imply glandular enlargement, and absence of hypertrophy is the reason why such cases are so obstinate of cure. A scrofulous diathesis predisposes to inflammation of the tonsils, and in acute

tonsillitis there may have been diphtheria, scarlatina, and the like, which can produce the enlargement spontaneously.

In acute tonsillitis the value of differential diagnosis is important, as the diseases that may be confounded with the acute tonsillar inflammation may be those I have just mentioned, that is, diphtheria, scarlet fever, where the rash is ill-developed, syphilis, cancer, or, perhaps more frequently than any other, phlegmonous pharyngitis. But in chronic tonsillitis we have not these differences to deal with, and we often make a diagnosis of chronically enlarged tonsils before looking into the throat. The characteristic thickening of the voice where there is hypertrophy, the speaking as with the mouth full, and the derangement of the whole respiratory tract, for the air in the upper air-passages passes over a very unhealthy surface, are sufficient to warn one what to expect when the mouth is opened. When enlargement of the glands is considerable the lungs are not fully aërated, the chest walls are never fully expanded, and from the inactivity of the latter they become narrow and shrunken, giving the breast-bone an undue prominence. This deformity is not exaggerated, and that form called "pigeon breast" is a familiar one to every doctor. Imperfect oxygenation is a natural consequence, and the child attains maturity (if measures are not taken to prevent it) in a very weak and debilitated condition.

Cough is not a common symptom, yet I have seen three cases of severe spasmodic cough due to the reflex irritation from enlarged tonsils. Two of the cases were seen in the clinic of Mr. Lennox Browne during my stay in the Central London Throat and Ear Hospital a few years since. One was in a little girl of eight years, who was continually given to "hawking" and "hemming," the cough being dry and without expectoration, occurring with violence at

times, before, during, or after a meal even, and would cough and choke until she vomited. This latter would relieve her only for a short time, however, and the cough continued distressing enough until she became weak and emaciated. This state of affairs had existed about six months when the child was brought to the hospital. Examination revealed nothing abnormal in the general condition, except the vault of the pharynx, which was nearly filled with hypertrophied tonsils. Their complete removal succeeded in stopping the cough, appetite returned, the child's expression brightened, and in a comparatively short time there seemed to be complete restoration to health.

The second case was similar; the age of the boy was twelve, and he had in addition the scrofulous diathesis. The removal of the tonsils cured the cough, and appropriate remedies greatly improved his general health. The third was a case in my own practice. Henry F., aged nineteen, a student, had suffered ten years with a harassing cough, disturbing at night, persistent by day. He had very reluctantly parted company first with his appetite, then with his flesh, and had been for two years very much emaciated and troubled with hysteria. He had been dosed systematically from time to time for stomach cough, tooth cough, liver complaint, tape-worm, thread-worms, consumption, and so on. His tonsils were chronically enlarged and would take on acute inflammation about twice every season. After considerable persuasion he agreed that I should amputate them, and since their removal the cough has disappeared, appetite and flesh have returned. This operation might have been made years before, affording him great relief. I thoroughly believe in the early active treatment of hypertrophied tonsils in children; for, *if there is* a likelihood of the disappearance of the glands in after years, ought we to wait for this, let the child out-

grow it, as it were, in the mean while allowing the senses of hearing, smell, and taste to become perhaps permanently impaired?

I have taken considerable interest in chronic throat diseases—though not a specialist—and in no class of cases do I know of having given more permanent relief than in thirty or more cases in which I have removed the organs entire where they had been the cause of all the trouble. The treatment of chronic lacunar disease is very unsatisfactory where there is no hypertrophy. I have found the best treatment for them to be the squeezing out of the thickened, cheesy secretions from the crypts, and the application of the galvano-cautery tip to the cavities. This may be done once in every two weeks until four treatments have been given, which will usually suffice for a time. Between treatments, lozenges or tablets of guaiacum comp., as manufactured by the Frazer Tablet-Triturate Company, will be found very serviceable. Morell Mackenzie recommends London paste applied once or twice a week over different parts of the inflamed organ. Sajous thinks well of the introduction of a portion of the solid stick nitrate of silver, on a heated wire, into the lacunæ of the tonsil. Others recommend crystals of chromic acid for the same purpose. Electrolysis is good, but entirely too tedious and troublesome. Occasionally this non-hypertrophic condition will take on active inflammation and enlargement ensue, which, if sufficient, the tonsils should be removed as would be done in regular hypertrophy.

As to the treatment of chronic enlargement of the tonsils, the most satisfactory method is the one of excision. The operation is easily performed and is accompanied with but little pain. The bistoury makes sure work of the gland, but there is danger of cutting the surrounding parts. The usefulness of the wire snare is almost limited

to such glands as grow along the side walls of the pharynx, and can not be induced to enter the ring of the tonsillotome. I had learned to use Mackenzie's tonsillotome, but recently have used Mathieus', which is much more convenient to handle and performs its mission more satisfactorily from the fact that it is easier to pull with the fingers than to push with the thumb. Again, the Mackenzie tonsillotome requires the aid of an assistant to hold the head and at the same time to press in the gland from without on the side of the expected operation. With Mathieus' one can operate without assistance. The instrument is introduced flatwise into the mouth until the enlarged gland is reached. A turn on its axis to the right or to the left brings the ring over the organ to be excised. If the thumb is now pressed forward, the fork extending the length of the instrument will penetrate the gland, and, beside holding it in a fixed position, will elevate it to any desired degree.

The thumb and finger rings may now be approximated, and the tonsil is guillotined, the excised portion remaining on the fork. The instrument, if necessary, can be quickly placed in position and again introduced for an operation on the opposite side. Slight bleeding occurs after the amputation, and I have the patient to gargle well with ice-water. It is well to have prepared at the time, in case the ice-water does not stop the bleeding, a mixture of tannic and gallic acid, six drams of the former and two drams of the latter in one ounce of water. This makes a thick mixture instead of a solution, and is to be sipped at intervals of five minutes or less. The suggestion of Sajous is a very important one—that of injecting a strong solution of cocaine into the parenchyma of the tonsil prior to operating. It produces an exsanguine condition of the organ, prevents even the usual slight bleeding at the time of the operation, and renders the patient less liable to subsequent

hemorrhage. According to authorities on the subject hemorrhage seems to be a rare occurrence, but may be profuse and even alarming. I give the exact language of Lefferts, who has had great experience in this direction, and who takes rather a serious view of the question: "That though the operation of tonsillotomy thoroughly performed is usually unattended by untoward result, still it is not free from alarming, sometimes dangerous results; and that though these be the exception, they should not be ignored; and that the surgeon must always be prepared both mentally and physically to cope with a hemorrhage that may unexpectedly occur."

After-treatment of excision of the tonsils demands a moderate amount of attention. I prescribe an antiseptic gargle of a dram each of salicylic acid and chlorate of potash to eight ounces of water. This is cleansing and healing to the cut surfaces, which in healthy subjects proceed to get well as fast as they can. Liquid nourishment should be enjoined for a few days. When the scrofulous diathesis is marked, appropriate remedies should be prescribed to combat it. Many inquiries are made to the surgeon as to ill effects likely to occur after the removal of the tonsils. Will the voice be as good as before? Will there be more danger of contracting cold, diseases, and the like?

I repeat the words of that most eminent authority on throat diseases, Lennox Browne, "That nothing but ultimate good can follow from the operation of removal of the tonsils in suitable cases."

PARALYSIS AGITANS.

By F. J. Yager, M. D.
Campbellsburg, Ky.

Case 1. I shall report in this paper two cases of paralysis agitans, the patients being a mother and her son. The mother I knew for some thirty years before her death. When I first knew her she had some agitation of her limbs, but with so little inconvenience that she was able to pursue her daily avocations. She was a domestic woman, and systematic in her work. The shaking gradually increased with her, and for some four or five years before her death at times seemingly she could not raise a half glass of water to her lips without shaking some of it out. Notwithstanding her age, I do not regard this shaking palsy as the immediate cause of her death. She died of liver and kidney troubles associated with indigestion, which greatly increased the already deranged condition of the nervous system; but she died at the full age of eighty-five years. I merely give this case as an introduction and perhaps some illustration of Case 2, which I shall now report.

Case 2. This case I give simply as it appeared to me, and describe it in like manner; but while I had it under treatment I obtained all the knowledge I could get bearing upon it from every source.

W. L., married; white; a gentleman; had lived well, in good circumstances, up to the age of about sixty-four years. I saw him February 8th. I found him ill, and he had been so for some three or four months. He had been

taking medicine for weeks from another physician. He was certainly the most uneasy and restless man I ever saw. This case I define as purely paralysis agitans. He is a son of the subject of the case I have just reported. At my first visit he was so restless that he would not sit down and be still long enough for me to make a full examination. By his wife's assistance I was able to examine his spine, every vertebra, and found no tenderness to the touch in any one of them. His pulse was about 60 per minute, perfectly regular; temperature 99.25° F. There was no tenderness about his body or limbs, except a little over the right side in region of the liver. The pupils were perfectly normal; surface normal. He was rational, but his restlessness was ungovernable, and he wore an anxious expression. There were very few indications of physical disease. He told me that he had not had any good sleep for nights together. His tongue showed a little biliousness and some signs of indigestion. He had been taking some medicine which had moved his bowels sufficiently. This case continued for over five months. I will describe its history: His disease, as well as I can learn, began to develop at the age of fifty years and in an insidious way; it may have been making some progress before that date; but from the time I took charge of the case his chief symptom was tremor, made worse by every effort at exertion. The symptoms grew worse and worse as time advanced. Some times one limb would shake more than another and sometimes both arms would shake with the hands clinched. He had progressive increase of restlessness, anxiety, and perpetual pain when awake. He could be still only at rare intervals when awake, and most always this respite was when under the influence of some drug. He could obtain sleep only through some drug in quantity sufficient to mitigate his pain. He was obstinately averse to doing

any thing he was asked or required to do except to take a walk, and it had to be explained very clearly to him where he was to go. He would take short journeys with a horse and buggy without great discomfort, but riding on the railroad was very painful to him. He walked on his toes with the knees a little bent. Any moving of the body, except in walking, seemed to inflict on him bodily pain so severe that he would cry out and beg his attendants not to move him or let him move himself. It was for this reason impossible for him to take a bath. The galvanic battery operated on him in the same way.

The loss of equilibrium was not complete until about two months before his death. Three weeks before his death the tremor was so severe as to shake the entire body. He was wearied beyond degree with the skaking, and displayed great irritability of temper, being in a constant fidget. When awake he could not be placed in any comfortable position. As the summer advanced the suffering seemed to increase with the temperature. He complained greatly of the heat and of a burning sensation in the lower extremities. His temperature during the whole course of his suffering, except two or three days before his death, did not rise over 1.5° above normal. I think it was never over 100°. Restlessness finally gave way to exhaustion, and tremors of the oscillatory kind began to show themselves. He could not speak; then came stertorous breathing, coma, and death. In addition to the foregoing is noted that indigestion was prominent, but this was generally benefited by bismuth and lactopeptin. His liver was also somewhat disordered; for this he got, with benefit, calomel and a laxative. His diet was nutritious and easy of digestion, and for five months he missed but few meals. My effort was to keep the system in good running order. When I discovered the slightest remission I used quinia

for some two or three days. I gave Peacock's bromide in various doses, and the iodide of potash was given in full doses. He got also salicylate of potash, sulphonal, antipyrine, and morphine. The two last named acted well in combination and gave considerable rest. The morphine given alone did not give me satisfaction; but atropia and morphine used by hypodermic injection was of great service. The morphia and atropia were given in small and frequently repeated doses until sleep was induced. After a month or six weeks this combination proved insufficient, and not wishing to increase the morphia taken by the patient, I doubled the dose of atropia with the happiest results. Belladonna plaster along the spine seemed to give some comfort and rest. I used freely a combination of tincture of nux vomica, iron, and tincture of hyoscyamus. After some time, with the hardest persuasion, I induced him to go with me to Louisville in company with his wife. My design was to get Prof. D. W. Yandell and Prof. H. A. Cottell to see him, which I did. They examined the case very closely, and gave the opinion that it must soon prove fatal. They also gave some very sensible advice as to the management of the case. Dr. Cottell cautiously analyzed the urine and found it to contain a trace of albumen, while the aliquot parts showed very little variation from the standard of healthy urine.

Medical writers do not regard this disease as hereditary. From this opinion I can not demur, but it is interesting to note that this patient's mother had paralysis agitans. The cause of paralysis agitans and its pathology are enveloped in mystery, and will so continue till we secure more accurate knowledge of the spinal cord and the medulla oblongata. With our present knowledge we can not penetrate far into the secret arcana of this hidden disease. Our medical writers all agree that the disease shows no distinctive

lesion. The etiology of paralysis agitans is therefore obscure. It must be admitted that whatever has been discovered that would indicate a change or lesion of the brain or spinal cord have been found under other circumstances, as in *post-mortem* upon old people.

Mr. Parkinson, of England, while in active practice had a patient with this disease and studied it very closely, and in the year 1817 read an essay before the Medical Society of London on the shaking palsy, in which he gave a very accurate description of this disease, if I may judge of what I have seen of it myself. The peculiarity thus denominated by Parkinson is the *sclerotyrbe festinans* of Sauvagese. Dr. Good called paralysis agitans *synclonus ballismus*, from the Greek words *ballisso tripudio*. These terms, and many more, all being used by the older writers, when brought to their intended meaning signify nothing more nor less than paralysis agitans or its kindred diseases in a mild or grave form. I spoke of my patient as always wanting to be walking; Dr. Parkinson said that his patient was partial to that kind of exercise because it diverted his attention from unpleasant reflection and gave a temporary mitigation of suffering. I find his description and what I saw in my second case accord in many particulars. Dr. Parkinson supposed that in his patient a chronic change had taken place in the cervical portion of the spinal cord or in the medulla oblongata. Allusions to this form of disease were frequently made by the antique writers. Prof. Watson in his lecture had to draw on Dr. Parkinson to supply matter for his class. He also referred to Sauvagese, Hall, Serres, Elliotson, etc., and reports Dr. Elliotson as having cured one case with the carbonate of iron, but with that remedy failed in all other cases.

Prof. Watson spoke of an old woman with a perpetual motion of the head in a bouncing way, backward and for-

ward, as being a mild form of paralysis agitans, but said nothing of its terminus.

In Robley Dunglison's Cyclopedia R. B. Todd wrote quite a learned essay, in which he said up to that time few cases had been recorded, and that he agreed with Dr. Parkinson that the trouble was located in the upper portion of the spinal cord, and in many of its symptoms resembled chorea and some other diseases of the spine. He said the treatment is the same as in other forms of paralysis arising from the cervical portion of the spinal cord, and that all is conjecture as to the discovery of lesions in the nervous centers in this disease, and that it can not be sustained by dissection in *post-mortem* examination or by rational argument in any other way.

In Richard Quain's Medical Dictionary there is a learned essay on this disease. The author shows much familiarity with the clinical history of paralysis agitans, but knows nothing about its etiology, and confesses it to be yet in obscurity. Considering it anatomically, he says no doubt it arises from the nervous center, and in many of its points resembles chorea, sclerosis, and mercurial poison.

Philip Zenner, of Cincinnati, wrote a sensible essay for the Louisville Medical News in January, 1884, on the various forms of paralysis, in which he says to prognosticate and treat a case one must know the seat and extent of damages and must know some of the pathological processes, and before we can do any thing we must first have a correct diagnosis and know the course of this disease, and if we know much we can certainly have a better chance to do much.

In fact, in the literature of paralysis agitans each writer seems to have drawn from some preceding writer, and you may trace on back to Parkinson, who wrote some seventy-five years ago; and in truth I can not discover that much light has since been thrown on the subject.

DISCUSSION.

DR. T. B. GREENLEY, of Orell: Paralysis agitans, in my experience, is of rare occurrence, for in nearly fifty years I have seen but thirteen cases; two of them I recollect very well, although they were not of near so grave a character as those described by Dr. Yager in his paper. The patients were both elderly men when the disease came on. The pathology is very obscure, but I regarded those two cases as due to alcoholism. Both were very fond of a dram. It was in old times, when it was customary for people to drink more than they do now; but they were getting pretty well advanced in life when the disease came on; it never disabled them from going around; they were always able to travel and take due proportions of food, and they enjoyed fairly good health. One, however, the younger of the two, had to be fed for many years; he was unable to feed himself, and he was considerably troubled with agitation of the head and contraction of the facial muscles; the other one was never troubled that way. This man, however, strange to say, walking along a railroad track one day had an apoplectic seizure and became unconscious for a few hours. They took him home; he recovered in due time from that; he was hemiplegic for a few months, but he mended sufficiently to be able to walk around again. He got even so that he could feed himself; the agitated condition of his hands was much relieved, and his speech was much improved. Altogether the apoplexy, notwithstanding its serious nature, in this case proved to be a remedy for the paralysis agitans. Both these patients lived to be more than seventy years of age.

THE PRESENT STATUS OF THE MEDICAL PROFESSION.

By Dudley S. Reynolds, A.M., M.D.
Louisville, Ky.

There are more than one hundred and five thousand names of practitioners of medicine in Polk's Medical Register of the United States for 1893, including all the 'Pathists.

Prior to 1876 the medical colleges of the United States had reached no agreement as to what should constitute a proper course of study, excepting the adoption of seven branches, including anatomy, physiology, materia medica and therapeutics, chemistry, principles and practice of medicine, principles and practice of surgery, obstetrics and diseases of women. Some of the schools held sessions of three months, a larger number four months, some others five months, and three nine months. The schools whose terms embraced a period of nine months required but a single course, while all the others required two courses, excepting in the case of persons engaged in pharmacy, or those who had been engaged in the practice of medicine for a certain period of time.

A convention was called to meet at Philadelphia in 1876 for the purpose of organizing an Association of Medical Colleges. After free discussion it was determined to prepare a plan of organization, and the convention adjourned to meet at Chicago in June, 1877. Prof. Edward Curtis, of New York, as Chairman of the Committee on

Plan of Organization, reported to the meeting in Chicago a series of articles of confederation, which were adopted, and although a bare majority of the regular medical colleges in the United States had representatives at that meeting, all the colleges, including the 'Pathies, soon adopted the principal requirements of the College Association, and in 1880 there were no medical schools in the country pretending to graduate students in less than two courses of five months each, while the colleges of every class required the dissection of the human body as a part of the course in anatomy.

With the growth of experimental research in the various fields of science the medical colleges of the United States have gradually incorporated laboratory demonstration, additional subjects of study, increase in length of term, and increase in the number of courses of collegiate training.

A convention of medical teachers assembled at Nashville, Tenn., May, 1890, agreed upon a new organization of the colleges. It was determined to exact three courses of six months each as a minimum requirement of collegiate study. The Association of American Medical Colleges which that convention determined to organize was perfected at Washington City, May, 1891.

Of the one hundred and thirty-seven lawfully established colleges in the United States and Canada, twenty-three now require four courses of instruction of not less than six months each, twenty-three require four or more years of study and three courses of not less than six months each, fifty-five require three or more years of study and three terms of not less than six months each. Of the remaining thirty-six, all but seven have announced a requirement of three courses of instruction before admitting applicants to final examination. Nearly every medical college

in the United States now requires clinical instruction, laboratory instruction in chemistry, toxicology, urinalysis, normal and pathological histology, bacteriology, pathology, and hygiene. More than ninety per cent of the regular medical colleges in the United States now require preliminary educational training equal to or better than that required in high schools of the first class. It may now be understood just how great the advancement in medical education has been in recent years.

Medical schools in the United States are not under governmental control, although the regular medical profession does not recognize schools which are not lawfully chartered by the State and authorized to confer degrees after a prescribed course of study. The medical colleges are ministerial officers of the State, authorized to confer degrees of rank and distinction in learning. The degree of Doctor of Medicine is the only medical degree in the list of professional titles recognized by the laws of the several States.

To preserve the common brotherhood organization was found necessary, and for the better maintenance of the honor and dignity of the profession of medicine medical societies have been organized, somewhat after the general plan of organizing the several governments of the United States, the American Medical Association being made up of representative delegates from such State, county, and other local organizations of the regular medical profession as conform to a definite plan or basis of organization.

This congress of delegates assembles annually, and divides itself into sections for the consideration of special subjects of general professional interest.

In Kentucky we have long been organized so as to secure representation in the national body, but we are not sufficiently well organized. We need more county societies, and when we make these auxiliary to the State Society,

making membership in the County Society a prerequisite to membership in the State Society, we shall be able to advance greatly in the scale of dignity and importance, and thus contribute largely to our advancement in learning. Every ten members of the regular medical profession in Kentucky are entitled to one representative in each annual meeting of the American Medical Association. This would give us a membership in the national body of more than three hundred delegates, and in a few years fully three thousand permanent members. That would mean to Kentucky a very great degree of advancement in science and letters, and a very exalted position for the medical profession.

The basis of uniting the profession has always been ethical, and this must remain the principal ground for any general organization of practitioners in all the various fields of specialism. It would seriously impair the character and standing of any medical school to undertake to provide separate branches or courses of study for the education of students in limited departments of medicine. Less than enough to make up a general medical education in all its details could never be accepted as the lawful qualification for the Degree of Doctor of Medicine. Specialism must therefore always arise in the regular ranks of the profession, and the schools must always provide expert specialists as teachers in every legitimate branch of medical knowledge, just as the colleges teach letters, the sciences, and the liberal arts. A medical society should be constituted of such persons as have been properly educated in the profession, and gentlemen engaged in any special field of practice may always derive advantage from contact with others engaged even in the most widely separated departments. The interdependence of each part of the animal economy upon the state of the general nutrition forbids exclusive specialism in practice.

It is seriously to be doubted if exclusive organizations of the profession following particular branches of practice result beneficially to that large class denominated "general practitioners." This class being largely in the majority, and its members being the only legitimate source for recruits in any field of specialism, it would seem absolutely necessary for the advancement of medical education that the societies should embrace every class of legitimate practitioners.

CREDULITY OF THE MEDICAL PROFESSION.

By T. B. Greenley, M. D.
Orell, Ky.

It is a common remark of medical men that there still exists among the people a great deal of superstition and an overweaning amount of credulity. These remarks are usually the result of speaking of their faith in such things as the holy coat of Treves, the remedial virtues of the shrine of Lourdes, the faith cure as practiced by Christian scientists, as well as in the general use of patent medicines, wherein they take for granted the virtues they possess as asserted by the inventors without knowing any thing of the character of the ingredients they may contain. We all admit that this widespread faith and credulity exist among the people. But can we say that we as a profession are exempt from the same charge, but of course not to so great an extent as it exists among the laity. I now allude more especially to the fact that many of our most eminent men seem prone to take for granted as true any theory that may be advanced in the way of new methods, or new remedial agents in the management of disease, as well as the etiology of the same, without due consideration or investigation. At present I will only allude to a few instances of this character occurring within the last decade.

All of us remember with what *eclat* Bergeon's method of treating pulmonary tuberculosis was announced, and that many able men in the profession accepted it as a rational plan. It was claimed that this treatment was in

accordance with the antiseptic theory; that the sulphuretted hydrogen gas was absorbed by the bowels and eliminated through the lungs, where it acted as a germicide. It was also claimed that this fact was demonstrated by the odor of the gas made palpable to the olfactories by exhalation from these organs.

If proper consideration of the theory had been given, its fallacy would have been very apparent, as it was impossible for the gas to pass from the bowels to the lungs.

Then we had the Brown-Sequard plan, by which old people could be rejuvenated. Fortunately this vulgar fad was of but short duration. Yet while it lasted many of our big men practiced it with reported good results.

But the greatest furor yet produced among medical men on account of something new in medicine occurred when Koch announced a new remedy for the certain cure of tuberculosis. The world, in this particular, had never known such excitement, and for a while we all believed that the millenium for the salvation of a large proportion of the human family had arrived. We all remember how many cases were reported as cured by this wonderful treatment.

I acknowledge that I was greatly excited with the hope, on account of the high repute of its author, that a remedy had been discovered for the greatest scourge the human family is subject to. This hope, however, was of short duration, continuing only up to the time when Koch announced the character of its ingredients. As he claimed his bacilli to be the cause of the disease, and prepared his remedy from the bacilli and glycerine, I no longer had faith in it as a remedial agent for the disease. I think we have no instance in medicine wherein a cause of disease proves to be a remedy for the same. In this instance I regarded the lymph more in the light of a prophylactic

than as a remedy, provided the tubercular bacilli cause tuberculosis. The position I occupy in this particular is well exemplified in the use of Jenner's kine-pox matter against variola, and Pasteur's diluted hydrophobic matter against hydrophobia. But it is well known that these agents would be of no remedial value in treating these diseases after development.

I will name a few more instances wherein our credulity has been exercised to too great an extent. It will be remembered that when Lister first instituted his antiseptic dressing in surgical operations it soon became to be essential, in the estimation of surgeons, for the safety of the patients in all operations. Some of his enthusiastic followers did not hesitate to announce that the least variation in the use of all of this paraphernalia, including the carbolic spray, was a dangerous omission, and that in case of accident or death the surgeon would be responsible and subject to damages for malpractice. But you know what a great change has come over even Lister himself in regard to his dressings. He has long since greatly simplified the proceeding and dispensed with a great deal of it. It was not long before he found the spray was injurious, and that the bichloride of mercury was irritating and poisonous. For years the *rôle* of operations was to use *antiseptic precautions*, now a majority of surgeons employ asepsis instead of antisepsis.

I think we are also somewhat credulous in regard to the etiology of certain diseases, and the manner in which the bacteria produce them. We might refer to the cholera bacilli. The bacteriologists lay down certain laws by which this microbe is governed. (Ball's Essentials of Bacteriology, p. 107.) In the first place it does not enter the system by inhalation, but is swallowed, either with water or food, but principally the former; sec-

ondly, it can not live in acids; thirdly, it is never found in the blood, and fourthly, its seat of action is in the ilium at the site of Peyer's patches or glands. Now, if all of these laws pertaining to the comma bacilli be true, they have a hard time in getting to the locality of their operations. It must be patent to the understanding of all that if they can not live in an acid medium their vitality would be hazarded in passing through the stomach; but admit that this law is weakly stated, and that they finally do pass through this organ alive, they yet have a long road to travel. They must pass through the duodenum, jejunum, and far down into the ilium before they can go to work. But now comes the most singular part of the whole story, when we come to consider the physical character and properties of the bacilli themselves.

The comma bacillus is a small microbe, you might say several hundred times less than nothing, if we make a parity of its size to powers of natural vision, requiring several hundred diameters of the microscope to outline it. It is, of course, of vegetable origin, and possesses no inherent power of motion, being actuated altogether by extraneous forces. Then again, it is of course destitute of any power of differentiating any special locality where it should set up diseased action. Now it must be admitted that it is, in its passage from the stomach to the lower part of the small bowel, only moved by peristaltic action of the organs through which it passes, and is carried along the tract with their natural contents. Now, can any one imagine how the peristaltic movement of the organs is checked at the point of Peyer's patches so that the microbe may be separated from the alimentary contents and placed at the proper locality to commence work? If we believe the laws laid down by which this microbe is governed to be true, we must believe it to have consciousness by which it is guided

to the place where it is to begin action. Then, again, we are informed by pathologists that the bacilli are found imbedded in the substance of Peyer's patches. Here is another puzzle hard to solve, as they possess no powers of locomotion, and, as before remarked, are only acted on by environment. If it was not for the law that these microbes are never found in the blood we could account for their presence in the substance of the glands above alluded to.

Now, when we take into consideration the laws laid down by which the comma bacilli are governed in their action in the production of disease and apply them to principles of reason and common sense, we must conclude that impossibilities confront us all the way through. In the first place, they could not traverse the stomach on account of the acidity of its contents. Then, again, how is peristaltic action to allow them to escape from the contents of the bowels and seat themselves in Peyer's patches low down in the ilium? And by what instinct or consciousness are they guided to this part of the bowel? Also, how do they force themselves into the substance of the glands?

We might further inquire into the pathology of the disease. It is known that in cholera the characteristic symptom is the rapid emptying of the blood-vessels of the serum of the blood, which is virtually the cause of death.

Now it seems very strange that the bacilli, admitting their presence in the substance of the glands, could produce the effect of inviting all the serum of the blood to the alimentary tract. In some rapid cases of cholera death ensues in a few hours from the development of the first symptoms. If the bacilli had been found in the blood we could more readily account for the symptoms.

Now, I think it will be admitted that it requires a considerable degree of credulity to believe all that is claimed

for the comma bacilli as regards their action in the production of disease.

Pretty much the same history as claimed for the typhoid bacilli might be given.

The pendulum is allowed to swing too far to the left by many theorists as regards the cause of disease.

It is claimed that the pneumococcus is the cause of a large per cent of pneumonia, I think about ninety per cent. (Ball's Essentials of Bacteriology, p. 114.) Although this bacterium is a common habitue of the mouth, it never does harm unless there is some injury done to the pulmonary tissue; but it is not stated how it becomes cognizant of the fact, so as to leave the mouth and search for the impaired tissue and set up a stage of congestion. It may be that when a person is exposed to inclement weather, either cold or wet, thereby producing a partial stage of congestion of the lung, the microbe in the mouth by instinct passes into the air-cells and brings on the initial chill. By the same instinct it must be guided to the lung affected.

As a prophylactic against such a dangerous disease it would be advisable to disinfect the mouth every day, especially during the pneumonia season.

But this microbe is credited with doing more work in the way of producing disease than it is entitled to, and in this respect nearly equals the ameba coli commune. It is credited with being able to produce, besides pneumonia, peritonitis, pleuritis, endocarditis, pericarditis, and meningitis.

As to the coli commune (Hohir and Councelman), it is charged with causing epidemic or tropical dysentery, together with all the same troubles due to the diplococcus aside from pneumonia, but also, wonderful to say, hepatic abscess.

But the most astonishing part of the history of its action is the manner or route in getting to the liver. In leaving the colon it passes through the coats of the bowel, traverses the peritoneal cavity, and by differentiation makes its way up through the intervening tissues till it reaches the liver, where it enters and commences its work in forming an abscess, thereby changing its character to that of a pus microbe. If the author of this history of the functions of the common bacillus had claimed that it traversed the alimentary tract from its home, the colon, to the orifice of the common duct in the duodenum, it would have had an easier route to the liver.

The accounts given by authors of the characteristics of certain bacteria are calculated to mislead the minds of their readers. It is stated (Ball's Essentials of Bacteriology, p. 18,) that some bacteria have the property of motion and are termed motile. This would lead us to think, perhaps, they were of animal origin and possessed of locomotor organs. Some varieties are spoken of as passing over the microscopic field quite rapidly. Again they are represented to possess all the functions of animals. "They breathe, eat, digest, secrete, and excrete."

Then again we are bewildered by the contention among bacteriologists as to the true microbe producing a certain disease. For instance, pneumonia is claimed (Ball's Essentials of Bacteriology, p. 111) as the result of the action of two or more different microbes. Frankel, Friedlander, and Weichaelbaum claim to have found several in this disease very similar to each other.

There are some ten different microbes so much alike in form that they can not be distinguished from each other; eight of them are found in Asiatic cholera, one in old cheese, and one in disease of chickens, and are very similar in their characteristics. When introduced into animals

under certain conditions some of them destroy life. (See Dr. Cunningham's Report, Calcutta.)

We have an account of a very singular phenomenon occurring in the history of the bacillus of symptomatic anthrax. On examination of a guinea-pig destroyed by injection with this microbe, it is stated that the bacilli are found in the serum but not in the viscera until some time after death. It would be a curious problem to solve how they reached the viscera after the circulation ceased.

In speaking of germicides, authors seem to regard heat as the most certain to destroy the vitality of micro-organisms. It is claimed (Ball's Essentials of Bacteriology, p. 22,) that spores of many varieties withstand very high temperature—some requiring 140° C., equal to 284° F., several hours to destroy.

Why is it that spores resist the application of high temperatures better than the bacilli of which they are the offspring?

We know of no vegetable germ or seed but its vitality would be destroyed in a very short time by a much lower temperature. For instance, if we were to apply a temperature of say 250° F. to mustard seed for an hour, its vitality would perish, and we must conclude its shell or capsule must be as impervious to heat as that of the newly developed spore. A great many things are claimed in the history of microbes that greatly tax our credulity to give credence to. We are taught to believe that in the microbe itself there is no harm, but in its products. After a short time it secretes a poison termed toxin, or tox-albumen, which produces its characteristic disease; and, again, in a shorter or longer time it secretes another principle termed antitoxin, which neutralizes or sets aside the poisonous action of the toxin or tox-albumen. This, of course, is intended on the part of the bacilli to cure the disease, but

unfortunately, in most instances, they come to the rescue of their host with the antidote too late to save the patient. It would be a wonderful thing, and a great help to the doctor, if they would secrete their antitoxin a little earlier in the disease. On this principle it would be a grand thing to cultivate microbes and preserve their antitoxin secretions for remedial agents.

We now present some instances of credulity on the part of medical men which transcend any thing in this line heretofore mentioned, but I am glad to remark that this character of credulity does not pertain to a very large extent to our own profession. I allude to the method of treating diseases on the plan of *similia similibus curantur.* In the first place we must exercise a great deal of faith in the preparation of the remedies. This more particularly applies to the virtues they derive by trituration and succussion than to the quantity of medicine given.

We must believe that by trituration and dilution increased dynamic force is imparted to these remedial agents; that a thirty-per-cent dilution properly triturated and succussed posesses more remedial virtue than any stronger preparation or dilution below it. But a great deal of its virtue depends on the time required in trituration and the number of shakes it receives. Then again, we are asked to believe that if these medicines have received the proper dynamic power by proper dilution and preparation they will exert as favorable an effect on the disease by olfaction as if administered *per orem.* But if we can manage to comprehend and believe all this, we may be headed off when we come to study the manner of curing disease. According to the rule, in order to eliminate the existing or natural disease, we must produce one similar to it, and then assist nature to destroy the one we have produced. It would seem to us, if we could see it in that way, that

it would be better both for the doctor and the patient to assist nature in the outset to get rid of the first disease, because if one similar to it is produced it results necessarily to the detriment of the patient and gives much more work to the doctor.

Now, our side of the professsion is charged with practicing allopathy — that is, *contraria, contrarius curantur*, which implies to produce a disease of a different nature in order to set aside or cure the existing disease. Of course we disclaim to recognize the cognomen, allopathy; but if guilty, as charged, we should make as short a job of a case of disease as our friends on the other side, because, instead of producing a disease in the system similar to the one existing, we would produce one contrary and of a much milder form, which with a little help from nature we could easily eliminate. But we regard it the best and shortest plan to aid nature to cure the disease we find the patient troubled with.

"To borrow Folly's cap and bells,
Though Wisdom oft descends,
Yet Folly to her cost doth find
That Wisdom never lends.
That Wisdom hath oft play'd the fool,
Is seen in every age;
But here the bargain ends, for ne'er
Hath Folly play'd the sage."

THE PHYSICIAN AS A PUBLIC BENEFACTOR AND SANITARIAN.

By T. N. Willis, M. D.
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My object in presenting a few thoughts on this subject for your consideration is not to say any thing especially new, but to impress more firmly the great advantages the laity have by reason of enjoying the benefits of the physician as a public benefactor and sanitarian. There is no man of more value to a community than a good, reliable physician. Others may bring personal comfort, wealth, and conveniences, but upon the doctor the people must rely to guard their physical welfare. There is no advantage in abundance of food if we can not have the relish of health to enable us to enjoy it, or the finest of clothing to hide a diseased body. Statistics show what a wonderful value has accrued from the arduous labors of the physician as a public sanitarian. For instance, in the city of London the annual death-rate has been reduced by improvements in sanitary and medical science from forty-two per thousand to twenty-one per thousand, as it now stands. In the same city the average life has been increased from thirty years in 1837 to about forty-five at the present time. When we stop to think what wonderful improvements we now enjoy in sanitary medicine it is indeed appalling. Notice, if you will, what a dread there was of smallpox, typhoid fever, scarlet fever, scurvy, and such diseases that are now practically under man's control.

Compare the condition of nations where medical science has reached highest development to those that are as yet in gloom, superstition, and ignorance. "A medical writer from Syria recently related the details of an epidemic of cholera in that country in which a mortality of ninety per cent of those attacked was of Mohammedan fatalistic faith, while those who abandoned theology and adopted a scientific treatment were brought under control." We know that failure on the part of the doctor to prevent the spread of many diseases is often attributable to failure on his part in proper sanitary inspection. After having studied the surroundings our attention should next be directed to the dwelling, and by close inspection we may be able to detect the cause of the disease. The mode of infection may be attributed to the use of the water-closet as a slop sink, or the garbage barrel, or soiled clothing; these are all sources of foul odors, and are frequently the origin of disease. The condition of cellars is always to be inspected, for as the air of the cellar is dry or damp so will be that of the house. I do not propose to go into minute detail of the physician's duty as a sanitarian, but casually to call your attention to some of your duties in the arresting of diseases.

We know that it is a mooted question as to how far the contagion of typhoid fever can be carried by the excreta being emptied into a stream of water. So there is no question of doubt but what the cholera scourge is considerably propagated in its serious ravages by the water used for drinking purposes. Dr. Farnell, Sanitary Commissioner of Madras, points out the immunity of Madras from cholera since the new water supply was obtained from a different source, or rather from Red Hills. Just in proportion as we observe the sanitary laws of health will we be enabled to protect the health of the people and prolong life. That the laity have not the proper appreciation of the physician

as a sanitarian and public benefactor there is no question of doubt. But this should not cause us to fail in doing a known duty. You need not be afraid of being robbed of your calling by a strict adherence to sanitary medicine, for the non-observance of the sanitary laws mapped out by the physician will keep the business going. It is a firm belief with many that man was born to live much longer than he does, if he only knew just how to follow out the laws of perfect hygiene.

Our State owes a great deal in the riddance of pestiferous diseases to the vigilant work of her sanitary officers in public charge, assisted by every true physician. While there has been much accomplished by these noble benefactors, yet there remains much to do in this line. "The State of Michigan can point with pride to the record of the great saving of human life, viz: It has the record of saving over one hundred lives from death per year by smallpox, four hundred lives from death per year by scarlet fever, and nearly six hundred lives from death by diphtheria, an aggregate of eleven hundred lives per year saved from these diseases, or three lives per day saved from death by these three diseases."

Now this great saving of human lives can only be attributed to active and aggressive sanitary work of physicians, assisted in many instances by the lay press. Hence the popular interest thus awakened has resulted in the formation of sanitary associations which are doing good work in educating the public. The success that has attended the local and State boards of health in the past few years shows a constantly increasing knowledge of sanitary matters among the people generally, which every physician and scientific man should strive to direct in proper channels by all means in his power. There are, it is true, some few individuals who by wild and unwarranted statements

of the dangers to health from various causes attempt to make capital by the excitement they create. These, however, with those who still ridicule sanitary reform as a new-fangled notion, must surely give way before honest and legitimate labor of trained scientists. While it is true the horizon is still dark in most States, we should not rest satisfied until every city, town, and hamlet throughout the land is awakened to a full sense of duty in regard to the advancement of sanitary medicine. Then will the horizon be bright with the glittering stars as they echo and re-echo the marvelous good accomplished by the physician as a sanitarian and public benefactor.

IS EXCISION OF CHANCRE A JUSTIFIABLE OPERATION?

By O. H. Reynolds, M. D.
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It is nearly twenty years since Sigmund demonstrated the fact that cauterization of the point of inoculation of syphilis, if done within three days from the time of inoculation, was competent in many cases to prevent the development of the malady. A step further in this direction is the prophylactic destruction or excision of the initial lesion itself, and it was not until ten years afterward that marked attention was drawn to the subject by Auspitz's publication of thirty-three cases in which the initial lesion of syphilis had been excised in the hope of thereby preventing any further manifestation of the disease.

Many of the younger German writers, convinced that the primary lesion of syphilis is entirely local in its nature, insist upon the possibility of arresting the progress of such infection by early and thorough excision of the initial lesion before the development of inguinal buboes. Not a few are also of the opinion that in those cases where the removal of the primary lesion fails of preventing the progress of the disease (and such cases are in the very great majority) its further manifestations are milder and more evanescent in character than usual.

Several of the older men among the Germans, and all the French syphilographers, with the single exception of Julien, believing as they do that the initial lesion is to be

regarded as the first symptom of syphilis, and that by the time of its development the whole organism is already affected by the disease, deny that its excision is possessed of any prophylactic virtue whatever.

Such is the statement of the case. The evidence as to facts is conflicting, the theoretical discussion of the problem is without definite results, and the question is to be regarded as yet unsettled. The only practical outcome of the discussion thus far has been to show that excision of the initial lesion is not followed by bad consequences when thoroughly done. Medical literature has been scant upon the subject. The opinion of Auspitz and his followers has not been substantiated by late syphilographers.

The auto-inoculability of the chancroidal virus and the non-auto-inoculability of the virus from the Hunterian chancre have left the conclusion in the mind of the profession that the former is truly a local and the latter a constitutional disease. The only question to be determined is, is the chancre the local effect of a contaminated constitution, or is it an initial lesion? If the non-auto-inoculability of virus from chancre is an established fact, then excision of chancre is not a justifiable operation.

The reasoning mind must admit that a period must elapse from the time of the exposure to systemic contamination. That time I do not think has been definitely established. If chancre is the primary lesion, as is entertained by some of the most eminent pathologists, then excision becomes a justifiable operation. Excision of cancer before the adjacent glands become involved is followed by the best results. Why not the excision of chancre?

So meager has been the literature on the subject that no definite time for excision has been prescribed; but if you will admit of the practicability of the procedure, I will say that excision is practicable at any time before the adjacent

lymphatics become involved, and I believe that the chancre is local till it breaks through the basement membrane. Then, and not until then, is the circulating fluid compromised and infected by its virus. If pathologists will establish the fact beyond question that chancre is the initial lesion, the profession could impress upon the laity the importance of early professional advice, and the patient would be spared months and probably years of bodily affliction and mental anxiety.

The moral effect of cauterization of chancre has been well demonstrated to the surgeon. The patient wants something done, and wants it done quickly. Every surgeon of experience has had potently demonstrated to him the ill effects of cauterization, and the more conservative ones have abandoned this practice, though many still hold to it for its well-known moral effect on the patient. The operation of excision under cocaine is an easy and painless one, and if justifiable should receive more attention from the general practitioner.

DISCUSSION.

DR. GREENLEY: For a long time it has been a matter of doubt as to whether or nor excision of chancre would prevent the development of the disease in the system, and I should judge from observation that if we could see the chancre immediately and excise it, in all probability we might prevent the further development of disease, but unfortunately we do not have a chance to see the sore until probably the system has become contaminated. Therefore in most cases I should think it would be useless to excise the chancre in order to prevent further trouble.

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